The Illinois Medical Journal.

The Official Organ of The Illinois State Medical Society.

Vol. VIII. No. 6. 25c per copy | Springfield, Ill., December, 1905. | Subscription $2.00 a Year.

SHOULD THE PHYSICIAN SEND HIS TUBERCULAR PATIENTS TO COLORADO?

BY W. H. WATTERSON, M. D., FOX LAKE, WIS.

I am loth to write on this subject because of the health I have regained and retained in Colorado during the past fifteen months, and because I must say some things which may seem adverse to Colorado as a place to send tubercular patients. But what I want to speak of is rather the discretion of sending patients without proper discrimination.

Flick and some others say there is nothing to climate. Climate has been referred to as a "will o' wisp," etc. Then by the other extreme it is spoken of as everything in the treatment. There is a happy medium to these extremes, and to know this extreme is to know climatology and its circumstances.

To visit Colorado on a beautiful autumn day when all is at its best and to come away and say we have studied its climate, is retrogressive; in fact, similar to the physician who places himself before the public as an M. D. after having taken a four weeks' medical course. One must remain a year, must be alert to conditions found, must study the benefits and detriments in relation to the tuberculoar patient and far better can he study these things if he himself has been a patient and taken the treatment. It having been my lot to fill the foregoing condition and in addition to have been connected, as physician, with one of the sanatoria. I have been prevailed upon to sum up my impressions of the conditions as they exist in Colorado. Tuberculosis is a condition resulting from getting away from nature and its only cure is in getting back to nature to the same extreme that we have gotten away from it. If one has been overworked, underfed and closely housed till his resistance has been lowered to the point of allowing the tubercle bacillus to invade, then his only hope is in rest, overfeeding and a life in the open air, till his resistance has been increased to and beyond the point of destroying the invader.

Now as to whether he takes this overfeeding in Colorado or Illinois, is of little consequence—with altitude stimulation in favor of Colorado and expense in favor of Illinois. Rest *can* be taken in a quiet camp in Illinois as well as in Colorado, except the nervous who rest better in the lower altitude and the overenergetic who will not rest so near his home. Then by the laws of ratio we have Colorado and Illinois of equal value in the questions of food and rest, two of the essentials to cure tuberculosis. Now as to open air, I do not wish to minimize the benefits of open air treatment, but that Colorado is the only place one can get it, is absurd. Let us take facts and look at them. Colorado does not have a mild winter. On February 11, 1905, it was 24 degrees below zero at Denver; it was more than 10 degrees below zero on several occasions during the past winter. I was recently told by Dr. Holden, Medical Director at Agnes Memorial Sanitarium, Denver, that the advantages of Davos, Switzerland, were the dry, *cold* climate of its winters and that the very best results were obtained at that time. Colorado is the opposite—freezing and thawing is the program for 95 per cent of the winter nights and days, giving a very uneven temperature. Colorado may have more days, or rather hours, of sunshine than Illinois, but judging from the past year I doubt it. That there is purer air in higher altitude is conceded; but that there is as pure air in a city like Denver as there is in a quiet country place away from factories

in Illinois, I am not ready to concede. A very large per centage of patients sent to Colorado never get out of Denver to live. The fact that there is increasing moisture and rains with increase of cultivation is as true in Colorado as it has been in any other State.

In an article of the October number of THE ILLINOIS MEDICAL JOURNAL there is an attempt made at trying to prove unwarrantable fear as to the effect of altitude. I must speak a word of caution here lest many a patient find out too late, that he is in too high an altitude. In handling over 100 patients during my connection with the Y. M. C. A. Health Farm near Denver, I saw at least a dozen patients who were *certainly* in too high an altitude. My own case was an example. On arriving in Denver I was examined by the medical examiner who found but one apex affected; by the end of three days both my lungs were badly congested, and this notwithstanding that I was quiet and in bed nearly all the time. There may not be much acceleration in the healthy by going higher, but there certainly is an increase in the disease, and especially where there is tachycardia as a symptom of the disease. Again our best men admit this acceleration of pulse and its dangers. I asked Dr. White, Medical Director of Nordrach Ranch, Colorado Springs, if he did not think altitude as detrimental as healthful, to which he replied, "Yes, unless the patient is under careful medical supervision." Dr. Holden admitted the detriment in advanced cases, while Dr. Evans of Colorado Springs Sanatorium, admitted altitude to be detrimental in nervous cases.

Then there is a long list of conditions which are not agreed upon by those treating the disease for many years in Colorado as to its relation to high altitude. For instance, few of the sanatoria will take tubercular bowel cases, laryngeal cases, kidney or heart complications, the very young, the very old, nervous cases, acute febrile cases, etc., till there are few if any who do not come under that class in which there is contraindication to high altiude by some good men. Another point which I must speak of and that is, that *no* patient should be sent into Colorado without being sure that he can get into a well regulated sanatorium. Of these I think Dr. Wheaton has given you a good list in the October number of this Journal, but this is but a very limited capacity less than six hundred in all to house the thousands being sent indiscriminately to Colorado.

To sum up, let me plead for the patient we as physicians are sending into what is unknown to most of us—they are getting results in Colorado but they are also getting results in your own State.

Allow me to put these limitations on sending patients to Colorado: First, that they have at least $500 bank account; second, that they know where they will be cared for before going; third, that there are none of the complications contraindicating a high altitude.

CRUSHING INJURY OF ARM WITHOUT FRACTURE OF HUMERUS—PERMANENT OBLITERATION OF BRACHIAL ARTERY—MUSCULO-SPIRAL PARALYSIS AND EXTENSION APPARATUS FOR SAME.*

BY GEORGE TARNOWSKY, M. D., CHICAGO.

Case history: Mr. K., age 39, elevated railroad conductor. While stooping down between the platforms of his car to connect the airbrake, which had not been attended to properly, his left arm was caught between the "deadboards" and squeezed. The accident happened just as the cars were rounding a sharp curve, and before the train had come to a full stop, with the result that the soft parts were not suddenly crushed but gradually ground together by the convex deadboards. When examined half hour later, numerous ecchymoses were found on the arm but no open wound. The biceps and coraco-brachialis muscles were crushed

*Presented at a meeting of the North Shore Medical Society, 1905.

and felt "doughy" on palpation. Pulsation of the brachial artery ceased at a point 4 cm. below the axilla. The entire limb, as high up as the junction of the lower and middle third of the arm was pale, cold, numb and pulseless. Musculo-spiral paralysis was complete. The little and ring fingers could be readily flexed, but there was only very slight motion in the thumb and two outer fingers, showing that the median nerve had also been injured.

There had been slight compression of the ulnar nerve, as evidenced by tingling and numbness in the little and ring fingers, but these symptoms only lasted a week. There was no fracture of the humerus. Severe pain was absent and there was very little shock, as patient was able to attend to his train until relieved, and walked to my office unaided.

Treatment: Patient admitted to the Chicago Union Hospital on the same day (April 23, 1904). Hot moist boric-acid dressings were applied to the entire arm and the limb elevated on pillows covered with oilcloth. Warmth was maintained by pouring on fresh hot solution every two hours, night and day, and by means of hot water bottles and blankets. These details are mentioned because their faithful execution in all probability saved the arm from the amputating knife. The forearm and hand remained pale for forty-eight hours and it was only at the beginning of the third day that capillary circulation was restored. Moist dressings were kept up for one week and heat for two weeks longer. Faradization of the biceps, triceps and supinator-extensor group of muscles was instituted three weeks after the accident and kept up bi-weekly for a period of ten weeks. Repeated examinations were negative as regards pulsation of the brachial artery, but within two months from the date of the accident, the superior-profunda artery was pulsating vigorously in the musclo-spiral groove. Soon after, a weak radial pulse was obtained for the first time since the accident. For several months the patient had to wear a woolen glove on his left hand, circulation being inadequate. Under combined faradization, massage and arm exercises, steady though slow progress was made.

The traumatic contraction of the biceps which only allowed 50 per cent extension of the forearm, was completely overcome; the supinator-extensor group of muscles regained their normal tonicity, and there was both motor and sensory improvement in the domain of the musculo-spiral and median nerves. My patient was very anxious to return to his work, but found it impossible to open or close the train gates with his left wrist. While it was reasonably certain that the musculo-spiral nerve would in time regain its complete function, it seemed to me that an apparatus could be fashioned which would enable the patient to do his particular work while continuing the bi-weekly faradization at the office. The various forms of apparatus devised by orthopedic surgeons were found to be either too cumbersome or too weak. Dr. G. S. Davis (1) devised an excellent but rather unwieldly pivot-splint which he describes as follows: "Two side irons pass, one on each side, from well up the forearm to the first interphalangeal joint, where they are joined by a rod running from side to side. The apparatus is jointed opposite the wrist and a spring on each side at this point serves to keep the apparatus in extension. The arm is laid in the splint, the cross bar at the end extending across the distal ends to the first phalanges on their palmar surface. Two straps fasten the apparatus to the forearm, and a piece of webbing fastened by buckles passes over the dorsum of the hand opposite the metacarpophalangeal articulation." Heuser's apparatus (2) consists essentially of a leather lacer on the forearm, wrist and hand, with separate rings around the thumb and fingers at the first phalanx. Separate elastic straps connect the gauntlet to each finger.

Van-Bibber (3) takes two strips of adhesive plaster and applies them on the posterior surface of the forearm in V shape, with the apex toward the elbow. An elastic band is attached to the end of one strip and made to pass into the palm of the hand, around the middle and ring fingers and back

to the other plaster to which it is attached. Both Heuser's and Van-Bibber's appliances allow too much lateral motion of the wrist joint. By referring to the accompanying photograph, the essential parts of my apparatus will be made clearer. On the ulnar side of the forearm and wrist is an aluminum-steel strip 18 cm. long, the proximal 13 cm. of which are rivetted to a leather lacer which encircles the forearm. At the distal extremity of the lacer, the aluminum-steel strip is curved slightly outward in order to avoid pressure against the styloid process of the ulna. Its distal end is opposite the wrist joint. A second strip 8 cm. long, made of the same alloy, begins at the wrist and extends along the ulnar side of the hand to the palm; rivetted at right angles to its distal extremity is a metal band which encircles the ulnar 2-3 of the palmar surface and the ulnar 1-2 of the dorsal surface of the hand. This band is covered with leather and the circle completed by a strap and buckle which is secured on the dorsum of the hand. A second strap is buckled around the wrist and prevents undue lateral motion. The two longitudinal strips are connected at the wrist by a joint, inside of which is a circular steel spring of sufficient strength to maintain a weight of one kilogram in the horizontal position when attached to the distal end of the apparatus. All three strips have a width of 1 cm. and a thickness of 1 mm. They are extremely light, quite elastic and yet are sufficiently strong for their purpose.

FIG II.

1. Leather lacer.
2 & 4. Aluminum Steel strips.
3. Pivot joint and steel spring.
5. Metal band partially encircling hand.
6. Wrist strap and buckle.

The spring and pivot joint are of essential value. Elastic straps were first used, but we had to discard them as it was found they allowed so much lateral motion of the wrist that the patient was unable to grasp any object with certainty; i. e., his wrist was too "wabbly."

The entire apparatus weighs five ounces and was made by Truax, Greene & Co., of Chicago, at a cost of ten dollars. The following distinct advantages are claimed for it.

1. It does not restrict finger movement; a pen or pencil can be used without trouble.
2. Undue lateral motion is restricted.
3. Very light weight.
4. All wrist movements are possible.
5. Ready adjustment and removal.

The musculo-spiral nerve being probably the most frequently injured nerve in the body and "wrist-drop" practically crippling the unfortunate sufferers thereof, the apparatus herein described will be found of practical use in a great number of cases. With it, my patient was at once able to perform his duties with ease and soon became so accustomed to it that he could execute the most delicate movements of the hand while wearing it. Four and a half months after the accident, wrist extension began to be restored, but patient continued to wear the apparatus for about three months longer. At present writing, recovery is complete. There are no motor or sensory disturbances, and barring a slight degree of atrophy in the biceps, his two upper extremities are symmetrical.

The radial pulse on the left side is about 1-3 strength compared with the right, but patient no longer suffers from arterial deficiency, nutrition and temperature being the same on both sides.

Remembering the intimate association of the musculo-spiral nerve and superior-profunda artery as they wind around the humerus in the musculo-spiral groove, it is rather difficult to explain why the nerve

should have received the brunt of the crushing. Daily examinations of various palpable arteries were made; it can be positively asserted that brachial artery circulation was never restored and that four or five weeks passed before a faint pulsation could be appreciated in the musculo-spiral groove. As was stated in the first part of the paper, pulsations in the brachial artery ceased at a point 4 cm. below the anterior axillary border; it became therefore evident that the superior-profunda was the only vessel which could, either directly or through its anastomoses, carry on the interrupted circulation. The following hypotheses are tentatively suggested:

(1) Was the injury to the superior-profunda so slight in nature that the thrombus softened and the lumen of the vessel was restored?

(2) Is circulation at present carried on by the vasa-vasorum? In the case described by South (4) "sets of vessels were found descending on either side (of the brachial artery) from above the obliteration to be received into others which ascend in a similar manner from below it."

(3) Was there a high division of the brachial artery and did one branch escape serious injury? Quain (5) states that in 20 per cent out of 481 cases examined there were two brachial arteries instead of one in some part or in the whole of the arm. This abnormal bifurcation is most frequent in the upper part of the arm.

(4) Were there "vasa aberrantia" (6) connecting the brachial with one of the arteries of the forearm or a branch from them? In the absence of a post-mortem dissection of the limb no positive opinion can be given.

References.

(1) G. G. Davis. Tr. Am. Orthopedic Surgery, 1902.
(2) Hoffa. Lehrbuch d. Orthopadishen Chir., p. 504.
(3) Sayre. Orthopedic Surgery, p. 532.
(4) Chelius. Surgery, vol. 2, p. 254.
(5) Quain's Anatomy.
(6) Gray's Anatomy, p. 597.

1916 Evanston Avenue, Chicago.

A CASE OF STRICTURE OF THE ESOPHAGUS, FOLLOWING TYPHOID FEVER.*

BY DR. S. C. PLUMMER, CHICAGO.

The patient, E. S., was a male student, 17 years of age, whose father was living and well. Mother died of pulmonary tuberculosis. Patient was temperate, and had no previous illnesses except the diseases of childhood.

On September 21, 1903, he took to his bed with typhoid fever. On October 15th, while apparently convalescent, he suffered a relapse, and was severely ill for more than three weeks longer. Liquid diet was continued till about November 12th. On this date he partook of semi-solid diet for the first time, and noticed difficulty in swallowing, with frequent choking. This condition gradually grew worse, and about December 10th the attending physician began passing esophageal sounds each day until December 19th, when patient was removed to another hospital. From December 19, 1903, to February 25, 1904, he received no treatment for the stricture, but from that date on a whalebone sound with steel olive tips was used.

On April 12th he became unable to swallow anything, even liquids, and was nourished by rectal alimentation. On April 18th he entered Wesley Hospital, Chicago, and on April 21st was anesthetized with ether. An unsuccessful attempt was made to pass bougies of various sizes, after which gastrostomy was performed, using a vertical incision, with separation of the fibers of the rectus muscle, as advised by von Hacker. As it was impossible to enter the esophagus through the cardiac orifice of the stomach, the edges of the stomach wound were stitched to the edges of the parietal peritoneum and a drainage tube inserted. It was not the aim to make a permanent fistula lined with mucous membrane, but it was hoped that the stricture of the esophagus would relax, and the gastric fistula, after serving as a temporary route for nourishing the patient, might be allowed to close.

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

On April 27th, six days after the operation, the patient could again swallow liquids. On the following day an attempt was made to pass a small bougie, but unsuccessfully. Several similarly unsuccessful attempts were made during the next few days. On May 4th the stricture again closed, so that liquids could not be swallowed, and on July 21st I gave up all hope of ever dilating the stricture, and the patient left the hospital. At this time he was strong and well nourished.

On August 26th after nearly four months of absolute closure he could again swallow liquids, and he returned to the hospital September 4th. Attempt to pass bougies were unsuccessful as before, so efforts were directed to getting something through the stricture by swallowing. Repeated efforts on the part of the patient failed, but on September 29th he informed me that he thought a very fine silk thread had passed through. His stomach was quite full at the time, and upon removal of the tube, which was kept clamped with an artery forceps, there was a free escape of stomach contents, and the end of the thread floated out through the fistula. A heavier thread was at once attached to the mouth end of this one, and drawn through the stricture, and to this a still larger thread attached and drawn through. The two ends of the latter were then tied together, first passing the stomach end through the drainage tube. Each day a larger thread was drawn through and finally three of the largest were in place at one time. On October 18th a small drainage tube was drawn through the stricture and allowed to remain two hours, then withdrawn, to be again drawn into place the next day. Every few days the size of the tube was increased until early in January, 1905, a No. 14 catheter was used.

On January 11th the string was removed and drainage tube taken out of the fistula. A bougie was then passed through the stricture per mouth, and this has been continued every day or two up to the present time.

On January 5, 1905, I began giving the patient thiosinamin, grs. iii, once a day. On January 12th this was increased to grs. iii, twice a day, and on January 27th to grs. iii, three times a day. On February 3rd this was stopped, as patient complained of a feeling of weakness, which might, however, have resulted from his eating but a small amount of food, owing to the fact that his abdomen was strapped rather tightly with adhesive strips in the effort to close the fistula, and food, when taken, except in moderate quantities, distressed him. The administration of the thiosinamin apparently made it possible to increase the caliber of the bougies, and more rapidly than ever.

On February 20, 1905, the patient was anesthetized and the gastric fistula, which was now about the diameter of a lead pencil, closed by dissecting away the scar tissue and separating the stomach wall from the abdominal wall sufficiently to insert sutures into the former, but without opening the peritoneal cavity. The abdominal wall was then closed in layers, secondary sutures over a gauze packing being used in the skin. Primary union.

A No. 28 esophageal bougie is now passed with ease.

CASE OF COLLOID CARCINOMA OF THE CECUM.

N. P., a female, aged 25, single, clerk by occupation, father dead, cause unknown, and mother died of consumption. No brothers or sisters. The personal history was negative until the summer of 1901, when she was seized with pain in the right iliac region. The onset was gradual, and followed in about forty-eight hours by vomiting and high fever. She remained in poor health for six weeks, when a diagnosis of appendicitis was made, and appendix removed. She recovered slowly after operation, but complained chiefly of weakness.

In August, 1903, patient began to have attacks of pain, vomiting and fever, lasting ten to fourteen days at a time, with intervals of several weeks. Pain was cramping in character, and more generally distributed than before. The latter part of July, 1904, she noticed a slight swelling in the right

iliac region. She had pain in the right iliac region, which radiated at times into the right lower and upper extremities. She experienced some difficulty in walking. There was much distention of the bowels by gas; constipation.

Examination revealed a firm mass, not adherent to the abdominal wall, with limited mobility.

Operation, September 22, 1904, at Wesley Hospital. A small incision was made over the tumor, and when the nature of the tumor mass was recognized, by examination through this opening, a long median incision was made. The ileum was divided near its lower end. Since it was found that the ascending meso-colon contained enlarged lymphatic glands, almost the entire ascending colon and its meso-colon were removed along with the cecum, the colon being cut across near the hepatic flexure. The ends of the divided bowel were closed by two rows of sutures, and a lateral anastomosis was made by a Murphy button between the ileum and the transverse colon. The ileum was dilated and its walls much thickened. The abdomen was closed without drainage.

The patient had a tedious convalescence. For many days she suffered from great abdominal pain, with occasional emesis, and got very little sleep. Gradually, however, she improved and on October 25th sat up in bed. The button did not pass until October 23rd, thirty-one days after the operation. On October 27th she was put in a wheel-chair, and on November 3rd walked. When she left the hospital, November 24, 1904, she was in a fair condition, and when seen about January 1, 1905, was in vigorous health.

The fresh specimen showed the walls of the cecum much thickened and indurated, with lumen so reduced in size that the little finger could not be passed through it. Adherent to the cecum was colloid mass, almost the size and shape of a hen's egg, and there were several similar masses of smaller size in the immediate vicinity.

On February 11, 1905, I met the patient on the street. She looked well but said that two weeks previously she had a few abdominal pains and thought she detected some swelling. On February 14th I was called to see her at her residence. She was suffering great abdominal pain, and a large mass, filling the entire light lower quadrant of the abdomen, could be palpated. Four days later she was removed to Charity Hospital. The tumor gradually enlarged till it occupied the greater part of the abdominal cavity. Patient died April 16, and on April 17th an autopsy was made by Professor F. Robert Zeit, to whom I am indebted for a report of the findings, which are in part as follows:

"It appears that one enlarged carcinomatous mesenteric gland, which had been left behind at the operation, was the source of the large secondary growth found at the post-mortem. No other metastatic tumors were found, and this tumor had a distinct capsule and was attached by a pedicle to the mesentery at the seat of the operation.

The anatomical diagnosis was as follows:

1. Solitary metastatic colloid carcinoma of mesentery. Size 40x28x21 cm. Weight 4490 grammes. Adhesion to right ovary and fimbriated extremity of right tube.

2. Pyelonephritis of right kidney and pyoureter (due to pressure of tumor, causing intermittent obstruction).

3. Enterocolitis with pelvic fibrinous peritonitis and perforating ulcer of ileum. Septicemia.

The last condition was the direct cause of death."

IMMEDIATE DIAGNOSIS AND TREATMENT OF LACERATIONS OF THE VAGINA AND PELVIC FLOOR AND PERINEUM.*

BY C. S. BACON, M. D., CHICAGO.

In any discussion of the obstetrical lacerations of the lower part of the obstetrical canal it should hardly be necessary to refer to the old and popular error that the perineum is the chief structure liable to be involved.

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

This misconception, however, is so deeply rooted that it is never safe to omit a reminder that all structures of the vaginal tube and its supports and attachments not only may be but frequently are torn by the stretching and tractions and the other stresses of the natural or artificial forces that advance the child and terminate in its expulsion from the body. We may have a tear longitudinal, transverse, oblique or irregular, of any extent, of any part of the tube itself. We may have such a tear involving not only the tube, but also its supports and attachments, namely, the muscular and fascial structures of the pelvic diaphragm, or it may involve the latter without tearing the tube itself. It is only when we keep clearly in mind all these possibilities that we are able to look for and find the injuries whose importance we are always more and more learning to appreciate.

For convenience of description and quite without reference to anatomical or other scientific basis, we may make a practical classification of tears of the vaginal body, pelvic and perineal region as follows:

First. Outer tears. These are through the skin and mucous membrane of the vulvar and perineal regions and also those involving the subcutaneous fasciae, vessels and nerves and various layers of muscles that are in intimate union with the lower end of the vaginal tube through which it passes. The anterior of these outer tears in the region of the labia and vestibule are most commonly parallel with the vulvar opening and sometimes completely encircle it. Occasionally but more rarely they are continuous with tears in the anterior or side walls of the vagina. The posterior or perineal group of the outer tears generally begin in the posterior commisure of the vulva and extend back through the raphe toward the anus. If the tear reaches the sphincter ani it may pass to one side of the rectum or it may divide and form an inverted Y around it. Sometimes it passes through the sphincter, forming a complete laceration. The longer the tear the deeper it is as a rule. If it reaches only the central part of the perineum it may only injure the skin and subcutaneous fascia, not seriously disturbing the outer constricting layer of muscles, the muscles bulbocavernosi. When the tear passes through the central part of the perineum it divides the outer constricting layer completely and may also injure the deeper constrictors, namely the vaginal portion of the muscles trigoni urogenitalis. Any of these perineal tears may be simply outside tears or they may be continuous with tears of the vaginal tube.

Second. Inside tears. These may be (a) only in the vaginal wall or (b) they may involve also the perivaginal tissues including the pelvic diaphragm or they may not involve the vagina at all, but only the fibres of the levator ani or pelvic floor. In any case they may be in any part of the surface of the vagina, but generally they are located posteriorly on one or both of the lateral walls. They may communicate with an outside tear or they may exist with an intact skin.

Diagnosis concerns not only the finding of these lacerations, but also the determination of their extent and importance. There are some difficulties in the way of making a diagnosis of internal tears that should be well considered. Either touch or inspection after the use of retractors or specula is necessary. Both cause the tired and bruised patient some pain and both involve some risk of infection. The pain could be disregarded in many instances or overcome with anesthesia if necessary. The risk of infection is more serious and must be carefully weighed especially when advising a plan of treatment for general adoption. It is one reason why Hirst, Dickinson and a few others have recommended leaving a puerpera alone after labor, making no attempt to diagnose or repair lacerations and wait for some days when an examination is made and if necessary a secondary operation. Another reason for this practice is the asserted fact that the results of immediate operations are unsatisfactory. The operation is generally done with unfavorable surroundings and with little assistance. Asepsis is not maintained and good restoration is not secured. Hence entire or partial failure results. If the examination

and operation be delayed a week perfect surgical conditions may be secured and a better examination may be made for partial involution will allow defects to be found that might have been overlooked at first.

To this method of procedure there always will remain the obvious objection that the patient generally will oppose strenuous resistance to a plan that involves, a week after confinement, an anesthetic and operation and the proportional longer term in bed. It is so opposed to present practice that it would seem to many patients a serious confession of malpractice. It would be permitted only in the most serious cases and most injuries would go unrelieved. Even now many lacerations are neglected because the physician hesitates to admit a tear for fear he will be blamed. I think we all must agree that Hirst's plan, even if best, is quite impracticable.

I do not admit, however, that immediate examination and repair need be dangerous or a failure. It may be safe and successful if the same care is used as is employed in a secondary operation. This involves a radical change in the technic of most physicians, but it is high time that such change be made. Only in case the patient is in serious condition on account of hemorrhage or other complication should the examination be deferred.

In some cases of non-operative labor no internal examination is necessary. When there is no sign of hemorrhage until the head is expelled there is no laceration of the vagina unless there is an outside tear. If the latter is not extensive its inner limit can generally be seen without internal examination. There is, however, a good index of inner tears that should cause one to search for them even if the outside is intact. I refer to the slight hemorrhage in the latter stage of the expulsion of the head when it begins to markedly distend the perineum during the forward movement of a pain. This indicates an internal tear that is often much more extensive than suspected.

When this vaginal hemorrhage occurs or when there is a considerable perineal tear or after any operation an examination should always be made to discover the presence and extent of a tear. As a rule palpation alone is unsatisfactory and should not be relied on, although it may enable us to confirm a suspicion of an extensive tear and thus obviate a preliminary unnecessary inspection. Although a better examination can always be made on a table and one should always be used if there is a probability of an extension into the pelvic diaphragm, yet as many slighter injuries can be repaired with the patient in bed with elevated hips the latter position may be employed in the average examination. If the patient has not been shaved or closely clipped this should be done. Then all sponges and instruments should be in readiness. For the examination one rather large retractor with a blade at least two inches wide and three inches long is needed, as well as a pair of dressing forceps and one or two pairs of volsellum forceps. For a light a good lamp is best. If a nurse or some assistant who can hold the speculum be present the lamp should be placed on a convenient stand and the operator should use a head lamp. For this case the patient must be across the bed. Otherwise she may remain lengthwise in bed with the hips well elevated on a douche pan and the thighs well flexed.

In some instances when the third stage is prolonged and there is very little flowing the examination may be made while waiting for the expulsion of the placenta. The cord should be cut off as short as possible and sponges packed into the vagina to protect the field to be examined. In case the placenta has been expelled care should be taken to keep the uterus well contracted and similar tampons used to protect the field.

The question has sometimes been raised whether a tear through the levator ani muscles that does not involve the vagina can be diagnosed. I have been unable to find sufficient evidence of this condition to justify operative interference.

The indications for repair are hemorrhage and the evil consequences which result when the torn structures are allowed to heal without being brought into coaptation. Hemorr-

hage of sufficient severity to demand suture is not common but occasionally rupture of vaginal varices give rise to bleeding that can be stopped in no other way. The hemorrhage from tears in the vestibule and in the labia is often profuse. The chief reason, however, for suture is the gaping condition of the vulva and prolapse of the pelvic contents when the perineum and the pelvic diaphragm are left injured.

Spontaneous healing is a delusion. Retraction of the divided ends always occurs and the healed wound is one with the gap unfilled, covered with scar-like skin or mucous membrane.

The chief point in repair operation is proper preparation. Except for smaller external tears the patient should be on a table. In every house there is a kitchen table which answers the purpose admirably. The Kelly pad or rubber sheet which the physician carries furnishes the drainage. The table should be put in the best position to obtain light. A sheet can be applied to hold the legs in place and save one assistant. Instruments, sponges and irrigator are made ready. For instruments besides those needed for examination only a needle forceps, needles and scissors are required. For internal suture catgut which will live for two weeks and for the perineum silkworm gut are best. I always advise ether anesthesia, believing that it does not harm the patient and that it enables me to make a better repair.

The cross bed is very frequently used instead of a table. It has no advantages and many disadvantages and should be discarded.

The method of operation in internal tears is as follows: The retractors being introduced anteriorily, the vagina cleaned and gauze or cotton tampons being inserted to keep the field clean from the uterine discharge, the catgut suture is inserted into the upper angle of the vaginal wound so as to grasp not only the edges of the tear in the vaginal tube, but also the retracted ends of the levator ani muscles. In this way the muscle is attached to the vagina and thus an abnormal condition created, but its function is restored and this is the best that can be hoped for. Sometimes effort has been made to fasten together the divided ends of the muscular diaphragm as in the operation of M. L. Harris. This ideal operation requires more skill than is possessed by the average physician and can hardly supersede the operation described.

It is not a matter of great consequence whether a continuous suture or interrupted sutures be used in the vaginal wound. The main thing is to close the wound thoroughly and thus avoid the formation of a pocket or receptacle outside of the vagina for blood and secretions.

Especial attention must be given to cases of laceration beginning in the vagina on one or both sides involving the pelvic diaphragm, extending into the central attachments of the accessory diaphragm, urogenital trigone, but not involving the skin surface. Sometimes it is here better to cut the skin bridge and make the repair in the usual way. Careful restoration with the catgut suture used in the vagina will succeed if the suture be durable enough. The usual cause of the frequent failures in these cases is that retracted parts are not brought together properly. A clear picture of the normal relations should be obtained and always kept in mind.

The simple external tears are easily brought and held together by silkworm gut. The most important point to observe here is that the suture be not tied too tightly. If the internal sutures have been properly applied, the perineal wound left is similar to a simple tear and is repaired in the same way. The very common mistake in all repair operations is to close the external tear and overlook the internal.

For a complete rupture there are two methods of suturing the rectal wall to restore the rectal tube. Some pass the suture from the perineal side, grasping sufficient

tissue to hold the suture but not going through the mucous membrane. After the restoration of the rectum the perineal suture will of course completely bury the first layer.

According to the other method the sutures which restore the rectum are passed through the mucous membrane and tied inside. This is a simpler technic and practically satisfactory, although not so ideal. The closure of the perineum differs from that in ruptures of less severity only in requiring a careful reunion of the divided ends of the external sphincter that are generally widely separate.

The advantage of silkworm gut suture for the perineum is well known. The chief objection is that the ends are apt to stick into the skin, producing considerable annoyance. To combat this annoyance the ends are sometimes left long and all the sutures fastened together. To this practice there is the objection that the bundle of sutures collects the discharge, and further it often leads to traction on some of the sutures. For these reasons I prefer to cut short the ends and run the risk of some of them being slightly buried in the skin.

In the after treatment chief stress should be laid on keeping the parts clean. Powders are of little or no value and may be objectionable if they form crusts that retain contaminated secretions. Catheterising is unnecessary and for general reasons to be avoided if possible. Irrigation or careful washing after urination will remove all traces and any danger from its contamination. Vaginal irrigation is indicated only when there is obstruction to the lochial flow from the vulva and it becomes contaminated and begins to have a putrid odor. Perhaps the most important thing to consider in the means to keep the wound clean is the nature of the dressing. It should be occlusive and at the same time not interfere with the free escape of the lochia. The same kind of dressing is desirable in all puerpera, but here it is especially important. It should be of gauze and cotton about eight inches wide and long enough to be fastened to the binder before and behind. It should be fastened at the four corners and then will fit tightly around the thighs, while it will be loose and sac like in the middle. Such a napkin will prevent the discharge flowing out along the thighs, as always happens when the ordinary dressing is held in place by a T band.

The bowels should be kept soft and moved on the second or third day. The external stitches should not require removal before the tenth day, and sometimes be retained until the fourteenth day. It is better that the patient remain in bed until the sutures are removed.

If we bring together the chief points in the treatment of yaginal-pelvic floor and vulvar lacerations we see that there are some differences of opinion in regard to the time of operation, and also in regard to the nature and technic of some procedures. As the most important differences we find Harris carefully uniting the torn ends of the levator ani muscle, while most physicians content themselves with attaching this muscle to the vaginal wall. There is also a difference in the method of restoring the rectal tube. Any operation will, however, give good results if it be carefully made and close attention given to details and technic and subsequent treatment. Without such attention to details we shall continue to have many poor results and total failures and considerable infection, so that the doubt of the wisdom of any repair receives some justification.

Discussion.

Dr. M. L. Harris, Chicago: I wish to say a word or two in emphasizing the importance of the muscular tissue entering into the formation of the pelvic diaphragm, for the reason that there is a tendency of late among some gynecologists to lay particular stress on the fascia. The pelvic diaphragm is in almost constant motion—in fact, in almost as constant motion as the great abdominal diaphragm; it descends and rises with every descent of the diaphragm. We have no instance in the human economy where weight is sustained, or pressure or tension maintained continuously

by fibrous or connective tissue. It is invariably held and maintained by muscular tissue; consequently we cannot expect that the weight which comes on the pelvic diaphragm to be maintained by fascial tissue alone. The importance, therefore, of restoring the muscles to as near their normal condition as possible following lacerations of these parts cannot be too much insisted on, and I am sure, if obstetricians would follow the advice of the essayists to repair these tissues immediately following labor, there would be less operating necessary subsequently.

Dr. Henry P. Newman, of Chicago: I wish to compliment the essayists on their very excellent resume of this important subject. It is a subject too large for one to discuss in the brief time allotted. However, I shall call attention to one or two points that ought not to be passed over lightly. I would like first to emphasize the indications for repair of the cervix. We do not operate for the primary tear in the cases that come to us as gynecologists. We operate for the accrued pathology. It is true that in this the primary tear is a causal factor, and if it were corrected early we would have, perhaps, none of the indications for this secondary operation. The indications are for something more than simply sewing up the laceration of the cervix. There is infected tissue to be removed, as Dr. Watkins has pointed out, and why should our work stop short of this. Why not, so far as we can, correct the pathology that exists? If we do this we have got to remove tissue which the essayist has been very careful not to remove, namely, the undenuded surfaces along the anterior and posterior portions of the cervix, which he retains for the preservation of the cervical canal. To my way of thinking, we should not leave behind undenuded mucous tisue that is involved even more, perhaps, than the angles of the cervix. We will find in most cases these structures eroded, everted, very much enlarged, the glandular tisue deeply involved, and to leave such infected tissue would serve as a menace to the restoration of the case in every instance. Consequently, operative work that contemplates the reconstruction of the cervix is essential, resoring it to as near a normal condition as possible, taking away the infected or involved area and leaving the organ so that it can functionate properly, free from infection and accrued pathological changes. Tracheloplasty, an operation which I have designated by that name, is appropriate for these cases as it fulfills all the indications for plastic work upon the cervix, fitting each operation to the individual case and not implying a classical method of handling all cases. In other words, each case is a law unto itself. All of the involved tissue is removed and the cervix is restored to as nearly its normal condition as surgery can accomplish. I cannot go into detail in regard to the technique of the operation. The method is known as Trachelorraphy and I would refer you to the publications which give a description of it. I was very much interested in the paper of Dr. Bacon and wish to thank the author for presenting the subject so ably and impressing upon us the importance of the pelvic diaphragm and of the parts that are concerned in childbearing.

Dr. Emerson M. Sutton, of Peoria: I wish to say a word or two in regard to the time of keeping patients in bed after operations for laceration of the cervix, which we are told is apparently somewhat a preventive of cancer. If for no other reason, I believe lacerations of a severe degree should be repaired early, because at the time of the menopause there is a tendency to malignant disease. The essayist puts the woman to bed for a couple of weeks, and, it seems to me, makes to much of an operation of it. These patients may have the cervix repaired, and can sit up in a short time. I have used chromicized catgut in all these operations for the last four or five years, and it has given much better satisfaction than the old way of putting in silkworn gut sutures. In order to make the catgut last longer, both in cervical and perineal work, we use an alum douche, which has a tendency to prevent the accumulation of bad secretions. One of Dr. Bacon's remarks was that no douche is to be used after the operation unless there is a bad odor from the secretions. If this alum douche is used immediately after the operation, and the catgut sutures are used throughout, the alum prevents too quick an absorption of the catgut and prevents the occurence of disagreeable secretion, keeps the wound dry with alum powder about the stitches. To me it has given the best satisfaction. In an attempt to repair a lacerated perineum immediately after labor, it depends altogether on the man. I have seen the perineum repaired by physicians who were affraid of this one thing, that patients would consider them guilty of malpractice if they did not repair them, yet they did not have the ability to repair a cervix as it should be repaired. In such cases the women had better be operated on for these lacerations later; but, at the same time, if the physicians have ability to repair them, it is an easy matter to do it.

Dr. Bacon (closing the discussion): I am obliged to Dr. Harris for emphasizing the physiological principle that muscle is the important structure in the pelvic diaphragm, as it is in all diaphragms. It seems to me strange that any other idea could be held.

In regard to the indication for operation

mentioned by Dr. Lewis, namely, repairing even a slight laceration for the purpose of preventing infection, I presume there is undoubtedly something to that. But this point should be considered, that the laceration in four cases out of five is larger than we anticipate.

In regard to the douche, I think we recognize now the danger of introducing any foreign substances that exert an action on the tissues that is harmful. We know that bichloride of mercury, for instance, will interfere decidedly with the physiological function of the mucous membrane of the vagina and of other living tissues. We know, for instance, that an artificial contamination of the vagina will disappear within twenty-four hours, as a rule, because of the normal bactericidal secretion of the vagina. We know, too, that if previous to this artificial contamination a vaginal douche has been given of bichloride of mercury or some other agent that injures the tissues, then it will be two or three times as long before the contamination disappears, and that is the reason why we should be very careful about using a douche. As a rule, the best douche is of normal salt solution.

What Dr. Sutton said about the operation depending upon the skill of the physician is very true. I had that matter brought to my attention two or three years ago, when I had as a patient a woman who had formerly been a trained nurse; she had been an obstetric nurse for many years before she was married, and had nursed for some of the best obstetricians in the city, and had observed their treatment. One day before confinement we talked over the question of preparation. She begged me not to make any repair operation, because she said it was her experience from the cases she had nursed such operations were always failures, and she was afraid of such a result in her case, in case an operation was undertaken. That, I think, does not exaggerate the ordinary or average experience of physicians. I have no doubt that many patients would get along better if they were not operated. Sometimes a little bridge is built up; there has been an extensive tear through the entire perineal region, and the operator has either not made a proper repair, or has made some error so that it did not hold, and the result is a little skin bridge which is worse than useless. So unless the operation is done right, it should not be done at all.

THE CAUSES OF TUBERCULOSIS IN THE STOCK YARDS DISTRICT.

BY CAROLINE HEDGER, M. D.,
AND
ELIZABETH JONES, CHICAGO.

This work was originally undertaken for the Chicago University Settlement, as a local physician had stated we had the highest mortality from tuberculosis in the city. This is not true; the figures from the death reports at the health department for last year and the cases cared for by the visiting nurses show about 28 per 10,000 living in the Twenty-ninth Ward, while the First Ward of Chicago shows nearly twice that number of cases per 10,000 living.

To find why we have 10 per 10,000 more deaths than the average for the whole city, the following steps were taken: A house investigation was planned, the sources of food were considered, the relation of work to the disease was considered in a district immediately surrounding the yards.

The district chosen covers four square miles, including the yards—extends from Thirty-ninth to Fifty-fifth and from Halsted Street to Western Avenue. The general aspect of the neighborhood is poor, the streets dirty, the air polluted by the yards and the city dump, which is located in the western edge of the district. The filth laden Bubbly Branch, the outlet of the sewers from the yards, bounds the district on the north, while a surface ditch in lieu of a sewer, extends along the western edge of the district. These sources of air pollution are all preventable and should be prevented.

The population of this territory furnished by the Small Park Commission is 44,900, the highest number per acre being 113, the lowest 3 per acre in the yards where almost no one lives. This, as compared with other districts in Chicago, where tuberculosis ex-

ceeds the average for the whole city, is sparsely settled.

The records of the Health Department were read over, as their statistics cover only sanitary districts, and for the years 1901-02 and half of 1903 a little less than 200 deaths were found in this district. Name, age, sex and address were copied, and 150 of these houses were visited and inspected from roof to cellar according to the points on the accompanying card. Fifteen houses gave histories of other cases of tuberculosis in the house in other years, or other cases in the family in which the death has occurred, one house having had in its walls thirteen other cases, yet the girl who died there in 1902 had contracted the disease elsewhere and came there to die. Another case in this house had moved in, and hearing the history of the house, had moved out, and the other twelve were all of one family. The people in this house all appeared healthy at the time of the inspection.

In not a single house in the district could the disease be traced to the house, exclusive of other sources. The houses are detached as a rule, with more or less narrow passages on each side, mostly two stories in height; only one was four stories high. The yard was usually in the rear; only ten were recorded as having no yard. On future examination this will be different, as there is noticeable now a tendency to build over the whole area of the lot. One hundred and twenty-seven had sheds or barns on the lot, and three had two houses on the same lot.

In the matter of light, the average per cent of dark rooms per apartment was eight-tenths of one—this because of the narrow passages and the habit of keeping blinds closed to prevent inspection by neighbors. Of totally dark rooms, twenty-nine were used as bedrooms, twelve as kitchens.

Very few of these were inside rooms, and air shafts are in this district almost unknown.

As to sanitary conditions, 62 2-3 per cent had open plumbing around sinks; 20 per cent of the plumbing was bad; 2-3 of the closets were in the yards and most of the rest in the basement or back porch of first floor; 36 were vaults, against all provisions of the tenement house law; 80 had sewer connections without water; the rest had water and sewer connections. This having closets in the yard is almost a necessity, as the water pressure is such that closets on the second floor for days and weeks will not flush except nights and Sundays, due probably to the immense use of water in the Stock Yards, and consequent reduction of pressure; 22 closets were absolutely bad, 45 medium, 66 in good condition and 17 unaccounted for.

In regard to the crowding in the houses, it was difficult to arrive at the facts; the only way was to get each one of the average four families in a tenement to estimate the borders of the other three, so the figures given in this connection cannot be exact. The average number of children per apartment was found to be 4.5, the average number of adults 6.3 and the average number of sleeping rooms 3.8, and from observation I believe that at least 4 people commonly sleep in a small bed room.

The number who sleep with closed windows was not statistically taken, but from conversation and observation it is extremely high.

These last factors seem important in considering the exiology of the disease in the district and show the campaign of education necessary to bring about ventilation and the adjustment of wages and rent that will enable a working man in the Yards to provide more bedrooms for his family. In another study of 148 families in the district the average rent was found to be $7.30, which in comparison with the average wage brought out further on will show that from 15 to 25 per cent of the earnings go for rent.

Early in the investigation, it was seen that other factors entered into the etiology of tuberculosis here, as much as any housing question and some work was begun on the sources of food supply, groceries and bakeries. This has not been completed, but so far as done shows the usual careless handling of bread and vegetables and the exposure to street dust that is characteristic of other

neighborhoods. A large proportion of the bakery stuff is made outside the district and has not been followed to its place of manufacture.

As many of the cases worked in the Yards and as many of the families gave their work as the cause of the disease, visits were undertaken to the Yards both alone and in company of the deputy factory inspector. When going alone, the killing floors were exhibited in extenso. The machiney, cattle pens, cold storage, but very few workers. With the factory inspector were seen the labelling and canning rooms of several firms. The sterilizing and trimming rooms, butterine and soap departments.

A few isolated facts will show why the next step was taken in the investigation—a large proportion of the workers seen, worked by electric light and one of the canners assured me that in winter he did not see daylight except on Sunday for months. No spitting signs were visible. Two closets used by 80 women would neither of them flush; other closets were separated from food preparation department only by single board partitions; other closets, conspicuously marked "Ladies only," were open wide.

Women worked in a cooked meat trimming room with the steam from the boiling room above pouring down on them. A door would have saved them. Other women worked in a can sterlizing room in steam so dense one could not see one foot. Other women worked at packing cans in a room where cans were soldered and sterilized in great cauldrons; a wall, 16 by 100 feet, would have cut off the steam and soldering fumes.

Men and women were weighing and packing cans in an atmosphere so dense that I doubt if they saw their work with any clearness.

Other women painted and labeled cans in an atmosphere almost unbearable from turpentine, and with a speed and fierceness of labor that made them seem more driven than the hung up carcasses that rushed along on the cranes overhead, in other parts of the plant.

While these things seen were suggestive of sources of vital depression conducive to tubercular infection, some statistical facts seemed necessary, and a labor card was devised covering eight questions. The form of this card is appended.

The Packing Trades Council was interested and sent out from their office 9000 of these cards in five different languages. Not one card ever came back. Personal friends expressed the fear of losing their job if they told the conditions under which they worked. While this is negative testimony, it certainly suggests that conditions would be changed at some cost to the employer if the public realized the burden to the community at large from the increased sickness and dependence of the workers. This has been well worked out by Mr. Bushnell in his study of the Yards in the Amer. Jour. of Sociology, 1902.

Mr. Bushnell also brings out another etiologic factor in his table of wages, in which he gives the average yearly wage of the unskilled as $347.36, skilled as $512.47.

Solomon states that in Germany the following relations exist between the wage and tuberculosis.

Per 10,000 living with income $250-300, 3.9 die.

Per 10,000 living with income $300-500, 2.61 die.

Per 10,000 living with income $500-650, 2.01 die.

Per 10,000 living with income $850, 1.07 die.

If this relation holds good here, one of our etiologic factors may be assumed to be our low average wage.

Another element in the causation of tuberculosis in part dependent on the wage is the food and drink of the neighborhood. In many cases, the cause of the "con," as it is familiarly called by the people themselves in the neighborhood, is ascribed to alcohol. Several cases were ascribed to drinking cold beer when heated, and one type of the disease is called "whiskey consumption" by the people.

The long or irregular hours of work, low

wages, precluding other diversions and poorly arranged dietary, doubtless increase the consumption of alcohol and the tendency to contract tuberculosis.

There are in this dictrict 300 saloons, 45 being located in two blocks just outside the Yards, all of which I am told contain restaurant and saloon features and are at noon extensively patronized.

In the diet, the consumption of bakery stuff and coffee is the most striking characteristic, but irregular meals, poor cooking and total ignorance as to the needs of the body are only too apparent.

In summing up we have:

1. Low average wage.
2. Comparatively high rent.
3. Consequent crowding in houses.
4. Factory conditions of deficient day and sunlight, deficient ventilation, deficient regulation of spitting.
5. Poorly managed dietaries.
6. Air pollution from various sources.

THE TUBERCULOSIS PROBLEM IN ILLINOIS.*

BY HOMER M. THOMAS, A. M., M. D., CHICAGO.

The Bloomington meeting of our Society will forever be memorable. It expressed the crystallized consensus of medical conviction that tuberculosis can be cured in Illinois. What a step forward this meant! Too long had we groped in the darkness of despair. Years of experiment and despondency were to be succeeded by the new hope and verified by demonstrated cures. The error of the past has been in seeking to cure mainly by systemic drug domination. To supersaturate the system with supposed antibacillary antagonists. This former therapeutic conception for the treatment of tuberculosis led to over seventy-four special treatments being advocated by physicians in this country alone, since the discovery of the tubercle bacillus in 1882. The comprehensive resumé upon which rests this statement was presented by the writer before the Chicago Medical Society in October, 1904. In it was shown that nearly every drug in the pharmacopeia, and nearly every method of a physical, electrical, hydropathic or mechanical character had been scientifically studied. And all to what purpose? The only scientific resources today which have stood the crucial test of time and experience are hygiene, diet and climatic environment. We now know that the best way to systemically elaborate antibacillary toxins is through a high vital resistance. This is secured mainly through an abundance of pure air, pure water, pure food and individually indicated exercise.

Illinois, the State standing third in the list of sister States in mortality from tuberculosis, is among the first to demonstrate its curability. The locality chosen for this convincing proof is the inland city of Ottawa. Our own Dr. Pettit has here successfully established a camp for the outdoor treatment of tuberculosis. He has here gathered up and crystallized into effective effort the best of scientific suggestions. Here on a wooded hilltop, with sandy soil and perfect drainage, overlooking a running stream, has been established the first tubercular camp. Here, surrounded by all the natural agencies which promote bodily vigor, and encompassed by scientific security, will the tubercular be restored to health. To this chosen spot, where nature revels in the multitude of her health-restoring resources, will journey the afflicted. But not alone in this spot, but in any spot where nature can encompass our bodies. Climate has been commercialized. From the far-off Western slope has come the dogma, there and only there can you be cured. Leave home and friends, and journey far, for only in certain sacred spots can you be healed. Medical science of the twentieth century places the stamp of falsehood upon such a monstrous claim. The blessings of nature are universal. They are all about us. All we have to do is to trust ourselves to them. Not by living in sunless houses, with dampened basements, moisture-laden walls, darkened bedrooms, heavily carpeted

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

floors and draperies of death; but where pure air and sunshine can circulate in every crevice, and death-dealing decay be banished by the universal chemistry of nature.

There are certain facts concerning the atmosphere which should never be forgotten. Air is a ponderable, actual entity. It has weight and inertia. It does not move, except when some force is applied to it. Air cannot move any more than the desk from which I am speaking, without some applied force. When we begin to realize this obvious fact will the problem of ventilation which is inherently one of moving masses of air, from one place to another be understood. Probably the most important and yet the most neglected form of ventilation today is that of our bedrooms, in which we spend a third or more of our lives. There should be in all sleeping apartments such a natural ventilation, or a mechanical ventilation, as will permit a free entrance and exit of pure air. We must recognize the difference between cubic feet of space and cubic feet of air. Fresh air must pour in at many openings to replace the air withdrawn, and through this process ventilation, which is at root the moving of air, is attained. The ventilation of our public places is almost universally lamentable. We should have a law that would provide that the air we breathe is liable to be analyzed at any time. If it is found to persistently contain more than six parts of carbonic acid, in ten thousand parts, legal punishment will follow.

From a consideration of these basic principles, let us view the tuberculosis problem in Illinois in some of its practical phases. Illinois loses every year at least 8,000 people from tuberculosis. The majority of these die in the most active and productive period of their lives. Many have been disabled for years preceding death. There is no other disease which entails so much suffering and economic loss to the State as tuberculosis. We believe that this suffering and loss can be largely prevented through the early recognition of the disease, and its rational treatment by properly managed sanatoria.

Statistics of sanitoria now in operation show that in 75 per cent of the patients treated, the disease can be arrested. This is an enormous gain in the treatment of a disease which for so long was considered incurable. Not alone in the number of patients whose disease is so arrested, is the beneficial influence of sanitoria found, but their vast educational influence is so great, that the further spread of the disease is largely prevented.

"The prolongation of life by the suppression of preventable disease is of much greater value to the State than the cost of the means employed."

The prevention of disease by the Japanese in their present war with Russia is highly commendable. The physicians and sanitarians have preceded the army; not as in former wars, followed it. The water supply has been tested, foods inspected and protection against infectious diseases secured. The result of this highly scientific scrutiny has been in a phenomenally reduced death rate from purely preventable causes.

Illinois, the State of vast industrial activity, tremendous agricultural resources, broad educational institutions, the home of great statesmen, scientists and philanthropists, must be freed from the blight and devastation of tuberculosis. Science has clearly pointed the way to accomplish this end. We should occupy the most conspicuous position in the field of preventive medicine. We should attain the best possible means for the protection of our millions of people from this disease.

Aside from the well-known means of disposing of tubercular sputa, by which we avoid infection or existing reinfection, is the important problem of early diagnosis. It is doubtless true that many cases of tuberculosis are entirely overlooked from a lack of thorough examination.

This should not be. In this age of instruments of scientific precision such negligence is inexcusable. To overlook the early diagnosis of tuberculosis is to stultify scientific struggle to control the disease. The detection of the systemic pretubercular

stage, or diathesis, among patients is supremely important. What are the habits and environments which make us receptive to the disease? Worry, overwork, overexercise, indigestible food, loss of sleep, vitiated air, constipation, overstimulation. We are aware that perfect health is an equilibrium between the systemic forces of construction and destruction. The life which can maintain this physiological proportion is indeed fortunate. We are all aware how difficult it is to avoid mental and physical overdrafts. It would seem as though all social, business or professional prestige is only achieved through overexertion. Nature honors such demands for a time. Finally, the conditions of living exhausts vitality, and the system becomes lowered in its vital resistance. The physiological equilibrium is not maintained. Destruction gains the ascendency. This condition resolves itself into one of cause and effect. It is right here that the majority of cases of tuberculosis date their inception. It is in the conditions of living that make possible the receptive or pretubercular state. If these conditions can be early detected, and then avoided, many, many cases of tuberculosis would never develop. This situation calls for greater elaboration, for it, in my opinion, strikes at the root of an immense majority of cases of tuberculosis. I believe the time will come when it will be considered a crime against self and humanity to have tuberculosis. It is criminal to labor where death-dealing demands confront one. It is a crime to destroy bodies from eighteen to forty years of life, which should live triumphant for sixty or seventy. No possible considerations of expediency or money should make such a crime justifiable. This outward mental and physical stress is first reflected in slight suggestive symptoms. The physician who can early see and interpret the small symptoms, that estimates the actual condition early, is invaluable to the patient. Symptoms of loss of appetite, slight exhaustion, evening temperature rise, accelerated pulse rate, should early excite suspicion as to the existence of the pretubercular stage. These symptoms frequently precede for many months the characteristic cough, night sweats and bacilli in the sputum. They are due mainly to the absorption of products of metabolism and disorganizations that are carried away from the breaking down of tubercles by the blood stream, thus reaching many organs of the body and producing vague symptoms, which are at first slightly noticeable. Of course, a case of tuberculosis at all far advanced diagnoses itself.

The effort to have the State of Illinois establish a sanatorium for the treatment of tuberculosis has progressed steadily during the year. The emphasis placed upon the need of such a sanitorium, as conveyed by the symposium on tuberculosis at the Bloomington meeting, has had a widespread influence. The agreement of physicians from all schools of treatment upon this subject led to a united effort to secure an appropriation from the present Legislature for this purpose. Some two months ago a number of physicians actively interested in this project went to Springfield and addressed the Senate and House Committee on Appropriations, with a view of securing a substantial sum for the creation of a State sanitorium.

The appropriations made by the last General Assembly for State Charitable Institutions, including ordinary expenses and special appropriations, were approximately $5,600,000. The total appropriation granted the State Board of Health was $53,560. Of this amount, $10,000 only was to be used in the event of a threatened outbreak of any epidemic in the State. In the absence of such epidemic, this leaves a total of $43,560 available for the purposes of the State Board of Health for the ensuing year. As the work of the State Board of Health is essentially that of preventive medicine, we have appropriated, altogether, then, about $70,000 for extending the scope of preventive medicine in our State during the ensuing year. Whilst this sum is, of course, totally inadequate for the demands of the great work for which it will be expended, it nevertheless is a very substantial beginning, and should be the source of incalculable good.

Viewed from the standpoint of economic loss alone, the 8,000 deaths from tuberculosis in 1904 would represent a monetary loss to the State of about $40,000,000. Since we estimate that about 75 per cent of cases of tuberculosis can be cured in sanitoria, the active spread of this work would lead, were there sufficient sanatoria in the State to take care of all cases of tuberculosis, to an annual saving of about $30,000,000.

The forthcoming two years should be those of active agitation by the profession and laity for an appropriation for a tuberculosis colony. It is only through professional organization in each county of the State, and personal as well as collective efforts through societies, churches and other forms of benevolent activity, that the proper interest can be created and spread throughout the State. If we can all work as a unit in this line, undoubtedly the next two years will create such an overwhelming sentiment in favor of the extension of tuberculosis sanatoria as to make our legislators feel entirely justified in appropriating a large sum for the furtherance and perpetuation of this work.

In matters of medical appropriations, the voice of the united profession should be supreme. We, and we alone, should be the judge of the amount of money justly needed for preventive medicine. Appropriations should be granted as a command; not as an entreaty.

The sacredness of human life is so great that all considerations merely of money should be laid aside and the always just demands of the profession in this respect be met with immediate compliance. For be it remembered that back of these requests is the united scientific sentiment of the profession as to their vital necessity. A State sanitarium will illustrate and typify the highest scientific judgment and experience in the management of tuberculosis. Its objective influence as well as the personal benefit derived by each case will be incalculable. Fortunately, the modern conception for the shelter of tubercular patients is the more open and exposed to the direct influence of air and sunshine, the better for the patient. Therefore, the actual construction of the cottages or shacks for patients can doubtless be of a very cheap though substantial character. If in the location chosen for a hospital enough farm lands can be secured so as to make them reasonably productive for the sustenance of the patients, not only will the economic element of their care be facilitated, but the individually indicated work which the patients may be able to do in tilling the soil and other work will be of curative value to the patients themselves.

The Illinois State Association for the Prevention of Tuberculosis has already prepared some suggestive plans for the construction of a State sanatorium. These plans are designed merely to convey a general idea of the broad principle which should be applied in the construction of a sanatorium for the tuberculous in Illinois. They embody the latest ideas of the special requirements for the treatment of this disease, as evolved from a careful study of sanatoria already in existence, and experiences accumulated in their operation in this country and abroad. Three principal points are given the greatest pretensions: First, making it possible for the patient to obtain the largest amount possible of fresh air, with out being exposed to discomfort. Second, arrangements for a dining room and kitchen on the premises, that the nutrition of patients can be best maintained. Third, proper medical supervision, with such arrangements for the study of the disease as will improve the efficiency of the institution. If these three essential comprehensive details can be followed, the sanitarium will doubtless be best adapted for the scientific care of the sick.

The main factor in the solution of the tuberculosis problem in Illinois is to secure our patients an abundance of pure air. It is from the unpierced heights and limitless expanse of the tractless skies that comes the life-giving ozone. Its presence in our blood brings renewed life and vigor. The flagging forces of nature find in its subtle chemistry the antithesis of decay. The sodden skin, the halting step, the lustreless eye,

the clouded brain, under its vitalizing influence are rejuvenated. Would we find freedom from tuberculosis, flee to the orchard, the meadow or the sunlit plain. There, bathed in nature's electrifying energy will tuberculosis be controlled. There will bounding buoyancy supplant the insidious ravages of disease. Pure air, pure air, the most widespread of nature's blessings, and yet the hardest of them to get. How few of us trust pure air. Pure air is the one race necessity that can never be combined in a trust. In all the world it is that of which there is the most of it. Of the twenty-four hours in the day, how many of them do we breathe pure air? We do not stint ourselves in food. but we do in oxygen. We can live weeks without food, but only five minutes without oxygen. Oxygen reduces fever, aids digestion, gives refreshing sleep and heals the lungs.

The tuberculosis problem in Illinois is one that vitally concerns the sources of impure air. These are mainly the home and workshop. Tuberculosis is a house disease. It depends upon the home for implantation, growth, maturity and propagation. The house is the granary of the bacillus. Houses of one kind and another are the ordinary means of spreading tuberculosis. The house is the most frequent means, and the workshop next. This is so because it takes prolonged intimate contact with a person, place, or thing that has been intensely contaminated with tuberculosis matter to give rise to implantation. The home and the workshop are two places where environment and sufficient length of contact for infection most readily exist. Probably three-fourths of all cases of tuberculosis conveyed from person to person are contracted in the home, and one-fourth through the workshop and environment. Homes should be made clean, dry, airy and bright. Buildings in which are employed men and women should be made sanitary, and have a correct standard of air supply and light supply.

The scientific solution of the tuberculosis problem in Illinois seems near at hand. Never was the prospect brighter, nor the means more available, nor the scientific spirit as strong for the accomplishment of this great end as now. Greatly to be congratulated is the advanced stand taken by the Illinois State Medical Society in this great and beneficent work. Not alone will the greatest good come to those sufferers in our time, but we are here today setting in motion great influences which will be a potent cause of increasing good to humanity in the ages to come. The highest conception of medical science today is in preventive medicine. This Society has taken upon itself the advancement of this great work. Let us go on with enthusiasm, energy and unwavering purpose, that in the end the tuberculosis probelm in Illinois may be scientifically solved, and the greatest scourge of all ages be forever banished from our midst.

MIXED, OR SECONDARY INFECTION.—WITH SOME CONSIDERATION AS TO TREATMENT.*

BY ETHAN A. GRAY, M. D., CHICAGO.

In the study of pulmonary consumption it is necessary to take into consideration the fact that we have to deal with more than one pathological process. As a primary infection we have the ordinarily slow tuberculosis, which shows frequent tendency to arrest and cure—which often attracts no attention during the life of the patient. This, of course, refers to the simple, uncomplicated process which we recognize as pulmonary tuberculosis.

However, as R. Pfeiffer remarks, "Tuberculosis does not long remain uncomplicated." The consuming influence of the secondary, or so-called mixed infection, is soon added to that of the milder and more sluggish tubercle, and gives us, as tissue rapidly breaks down, the familiar picture of pulmonary consumption.

The bacterial organisms involved in the

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

production of mixed infection are, in the order of frequency, Streptococci, Pyocyaneus, Diplococci, Tetragenus and Staphylococci; and their implantation usually occurs subsequently to the tubercular invasion, and after the ground has been prepared by the successive pathological changes produced by the tubercle bacilli, although they may be occasionally found before the presence of the t. b. is discovered. In phthisical subjects they are found in tubercle, in cavity walls and contents, and on ulcerated surfaces, whither they are brought by blood-stream, by aspiration or by extension from older infection.

They are also found at times, in the nasal and faucial secretions, and are, in this location, a source of possible danger.

Clinically, the course of secondary infection may be early or late, insidious or abrupt. When early, the microscope may show the sputum to be loaded, as it were, with bacteria, while few or no tubercle bacilli will be discovered; for these latter are often absent until a profuse expectoration flushes them from their scarcely broken nodules.

When the infection occurs late—comparatively speaking—in the course of a tuberculosis, it may manifest itself from time to time, in moderate exacerbations of temperature with a tendency to malaise, and, perhaps, accentuation of the pulmonary symptoms; or, a moderate fever may add itself to the symptom-complex without causing any great distress to the patient. These attacks are often erroneously held to be malaria, grippe, colds and the like; they subside, leaving the sufferer in much the same condition as before, save that he is a bit weaker and more lung has become involved. When the infection has become well established, i. e., when the destruction of the lung has become more rapid, the characteristic temperature of consumption is observed: sub-normal in the morning and higher in the afternoon and evening; the pyrexia being at times ushered in by a chill and followed by more or less sweating. Coincident with the progress of the infective process appear emaciation, loss of strength and energy.

Other exhibitions of secondary involvement are seen in the occasional pleurisies and broncho-pneumonia which are so often encountered in the course of consumption. At times the hemorrhage from eroded arteries will be the agent of infection, in that the escaping blood carries from the ulcerating environment, pathogenic bacteria into remote parts of the lung, causing a severe toxic pneumonia which is usually fatal. Caseous nodules, breaking down, liberate countless numbers of disease-bearing germs, which, invading areas of healthy lung, produce an extension of the consumptive process. During the period of infection Ehrlich's diazo reaction will often be observed. Ehrlich, as well as others, has ascribed to its appearance a fatal prognostic significance. It disappears at times, according as the by-infections are cleared up. While its demonstration in a given case does not seem to me to be a certain sign of death, its disappearance after having been once positive, speaks for definite improvement.

As to the treatment of secondary infection, I shall content myself with mentioning Bed Rest, Open Air, Climate, Attention to Nourishment, Hydrotherapy, etc., these are all of value when they can be made use of in an intelligent manner. More especially, I desire to speak of the use and effects of Anti-streptococci Serum, which I have used in a number of cases. I have been able to collect reports of about 150 cases of mixed infection which have been treated by serum said to be derived from the streptococcus. With the exception of 25 cases treated by Menzer, of Halle, all of the 150 cases mentioned are reported by Foss, of Phoenix, Arizona; Bonney, of Denver, and Pogue, of Greeley, Colorado. All report results satisfactory according to the stage at which the infection was treated. Menzer uses a concentrated serum which is cultivated from strep. of human origin. His results are most encouraging, even in a few late cases, where no benefit was to have been expected.

In passing, I would say that Menzer judges of the probability of a cure by the condition of the heart; if the organ be strong, he administers the serum; otherwise, not.

Foss, in a paper published in 1903, stated that he found a decrease in the number of tubercle bacilli in the sputum after the use of antistreptococcic serum, of from 50 to 80 per cent. Bonney, in June, 1903, reported 25 cases so treated, of which 3 recovered rapidly, 4 showed marked improvement, amounting to arrest, 5 improved in a lesser degree, 8 made slight gains and 3 none. Bonney's results were, in several cases, permanent. Pogue, of Greeley, has treated upwards of 50 cases with good results. With the exception of the cases reported by Menzer, most of these cases now mentioned, together with my own, were treated with what is known as Streptolytic Serum.

Before presenting case memoranda I will briefly recapitulate the phenomena attending the administration of the serum; giving a tubercular patient, more or less poisoned with streptococcus infection, 10 per cent of serum daily, for six or seven days, the following symptoms will appear: Fourth to seventh days, slight erythema at site of injection; urticaria soon follows; by the ninth day there may be swelling of face, hands and feet, and the itching becomes almost intolerable; now occurs in some cases, an arthralgia which may involve all of the joints of the extremities, and even the glenomaxillary articulation. The cutaneous manifestations now give way, to be followed, perhaps by an evanescent petechial eruption. The temperature ranges from 100 to 104 degrees; pulse may run as high as 120, or, as in one case, to 150. Following the defervescence, which occurs about the twelfth day, spasms of the gastrocnemii are sometimes seen when the patient attempts to stand. Certain cases do not exhibit the stormy reaction here portrayed, but pass through the entire period with a minimum of discomfort; re-administrations, as a rule, show fever signs of reaction. Although very painful and distressing, the trials and tribulations of this course of treatment are usually well borne by the patients.

When the storm of reaction has passed, and, perhaps, before we find the cough materially lessened and the expectoration reduced to a minimum, if not entirely gone. The sputum now being taken for examination, shows an appareent increase in the number of t.b., owing to its limited amount and concentrated character. On the other hand, streptococci and other bacteria will be found with difficulty, if at all. Not only the streptococci, but all of the other pathogenic forms above mentioned, seem to be directly affected by this serum, which appears to act as a polyvalent, although its makers state that it is cultivated from one strain of streptococcus. The length of the period of immunity to re-infection, if such there be, is not constant: it probably depends on the amount of infection originally present in the individual, the amount of serum given and the amount of resisting power conferred by the treatment or inherent in the patient.

To be taken into consideration, also, is the condition in which the diseased lung still finds itself, for a cure has, by no means, been accomplished. The elimination of the pathogenic bacteria and their toxins has but cleared the ground of complications and rendered the cure of the tubercular disease a relatively easier matter; a re-infection can, of course, take place again, in which case it must be eradicated with the same energy as in the first instance.

In presenting notes on the following cases I would ask you to consider them as cases which have been under treatment for mixed infection, but not as cases cured of tuberculosis.

Case 1. C. S., a young man 24 years of age, married, came to me in October, 1904. He had had cough for two months and had been spitting for two weeks prior to consulting me. By occupation, he was foreman in a machine shop. At his first examination he had a normal temperature, 84 pulse and chest expansion of 2¾ inches; the physical examination showed a flattened left chest,

consolidation of both apices. The evening temperature was found to be 99 degrees with occasional jumps to 100 degrees; pulse at such times was 100. The first microscopical examination showed numbers of tubercle bacilli, and a few streptococci. The patient was immediately taken from his work and put at rest in the open air and treated with tuberculine. During the months of October and November he did fairly well, having a low pulse and moderate temperature. But in the first week in December his temperature began to range around 101, and he lost strength steadily. The microscope showed not many t.b., but an enormous increase in the numbers of streptococci. He then received 60cc of streptolytic serum during the next six days, the various phases of reaction were well borne and the patient emerged from the ordeal in due time, with a normal temperature and pulse. The cough became very infrequent, while the scanty sputum contained no streptococci and but very few t. b., these last appearing somewhat disorganized. On the 3d day of January, 1905, no moist sounds were to be found in the diseased area—in fact, a slight creak was the only abnormal sound discoverable. February 14th nothing was evident but dullness at the right apex. April 27th the patient was working at his trade in a country town and doing well.

Case 2. G. S., male, 34, clerk. He had complained of pulmonary disease for six months before coming to me on August 1, 1904. He gave a history of cough, night sweats, expectoration and loss of weight during the period mentioned; an haemoptysis had recently occurred. Physical examination revealed an apical consolidation with some cavitation on the right side. Pulse 100, temperature 100. Urinary findings, positive diazo, nothing else abnormal, sp. gr., 1020. During the first month of treatment the pulse ranged from 90 to 108, temperature 97½ to 102. Patient was placed out of doors, day and night. September showed a lower pulse range and some gain in appetite. In October hemorrhage occured and temperature ran constantly above 100 degrees. Numerous colonies of strep. and staphylococci were discovered.

On October 11th the streptolytic course was begun and continued until 75cc had been injected. Reaction was very severe, general arthralgia being constant after the fifth day until the fifteenth; fever ran as high as 104 degrees. After the wave of reaction had passed the sputum was found to be clear of strep. and very scanty; t.b. were found in large numbers in this sputum which amounted to not more than two drachms in twenty-four hours. The diazo was found to have disappeared. This man went through the winter with open windows and has steadily gained ground; he has since received 100cc of serum because of re-infections. At no time has he been so weak as before the injections were instituted.

Case 3. A. B., Swede, tailor, age 26. Appeared for treatment October 26, 1904. Weight 155 pounds, height 5 feet 11 inches. Gave a history of early alcoholic excess; complained of having had, during the preceding ten months, cough, profuse expectoration, night sweats, fever and hemorrhage. Physical examination, an emaciated man, skin slightly but generally cyanotic, consolidation of upper half of right lung, cavitation not extensive; Litten's sign absent on left side.

The pulse ranged from 108 to 125 degrees in the morning to 98 degrees in the evening; temperature, 102 degrees. Tubercle bacilli were present in large numbers, together with streptococci. In one week the patient's weight had diminished six pounds and the strep. colonies were largely increased; these facts, together with the excessive expectoration, and cough which distressed the patient greatly, led us to resort to the streptolytic course; 60cc were administered. The usual reaction supervened, after which expectoration entirely ceased. Temperature dropped to 98.6, and remained there until the patient died, two weeks later. During this afebrile period the patient slept only under opiates or hypnotics. This stage

of the case was especially distressing by reason of the severe brachial neuralgia. Dyspnoea was frequent, cyanosis was constant. After the lungs had been cleared of the catarrhal manifestations, the percussion note took on a more woody character. Autopsy was refused.

Case 4. Miss B. L., age 26, cook. Both apices dull, signs of activity behind the right clavicle. Severe cough, expectoration, night sweats, subnormal morning temperature. After transferring the patient to the hospital open air and bed rest brought about an improvement. Sputum examination showed numbers of t.b., but few or no bacteria. After admission to the hospital she never had a pyrexia, but a.m. temperature gradually became lower—streptococci and other bacteria became more numerous. From March 20th to April 29th 120cc of serum were, from time to time, exhibited. Reaction was never at any time severe. After the latter date cough and expectoration still continued, but patient was able to be about. Her appetite is good, she sleeps well and is, her condition taken as a whole, much better than before.

Case 5. Miss A. K., age 18, had an attack of supposed grippe about January 1, 1905. The case pursued a febrile course until February 13th, when t.b. were discovered and the case referred to me. The right lung was involved down to the third interspace, examination showing consolidation and cavitation; left lung normal. Morning temperature 97, evening 100; chills, sweats, malaise, cough and expectoration. Few strep. were found. Patient gained steadily after being put to bed with windows open. The appetite improved, cough and expectoration lessened and the menstrual flow, which had been nearly suppressed, was re-established. However, on the date mentioned, fever recurred and a grippe-like attack devoloped; the increase in the cough and expectoration led to the belief that we were dealing with an acute mixed infection. The microscope revealed numerous bacteria and the streptolytic treatment was administered. The usual re-active phenomena were observed; after their disappearance the temperature again became normal, as did the pulse. Expectoration there was none until ten days later, when a profuse t.b. bearing sputum appeared; this may have been due to the breaking down of a small tubercular node, for the discharge rapidly became scanty. The case is now in a satisfactory condition as regards sleep, appetite and cough. May 10, 1905, normal temperature; pulse, 80-90; no cough at night and but little during the day; weight increased two pounds.

Case 6. G. C., male, collector. First examined March 23, 1905. Extensive loss of tissue in upper part of right lung; consolidation down to fourth rib; cavity in left lung down to lower border of clavicle; no appetite, constant cough, chills, sweats A. M., temperature 101, pulse 125 P. M., temperature 103 5-10, diazo positive, gingival redness present. Patient was put to bed in hospital and streptolytic serum given; he received 80cc up to April 6th. By April 10th the morning temperature had dropped to 98 6-10, P. M. temperature 100, pulse 86. Appetite became hearty, sleep undisturbed by cough, and sputum limited in amount. April 21, 1905, diazo absent. May 2, 1905, appetite excellent, fever disappearing in afternoon, two and one-half pounds increase in weight.

Case 7. Miss L. B., age 20, boxmaker, weight 99 pounds. Came to me April 26. No history of tuberculosis except in factory, one employe having had consumption. Both apices dull, left apex down to inter border of clavicle. Pain on pressure over left apex, high pitched expiratory murmur over left apex. Posteriorly, right side down to fourth dorsal vertebra, bronchophony over right lung, crep. räles opposite lower angle of scapula. Litten's sign absent on left side. No diazo. Pulse 100, temperature 102 5-10; chills, fever and night sweats, no appetite, strep. tetragenus and t.b. Patient put to bed with windows open. During first twenty-four hours she expectorated 110 times. Streptolytic serum was given, 10cc daily for six days. Appetite improved immediately until serum reaction occurred. Cough di-

minished and expectorations became reduced to nine times in twenty-four hours. Present average is 12. Patient's fever is now moderate, pulse 120 respiration 16. She is not yet up, but conditions point to improvement.

As I have already remarked, these are not cured cases. They are still under observation and will not be out of danger for many months, some will never get well. However, their chances are far better than when the toxins of the tetragenus and streptococcus were literally consuming them. I believe that in the anti-streptoccic serum we have found an ally of material value in our fight against secondary infection, particularly when the approved hygenic measures have fallen short of our expectations.

In closing, I would urge the importance of early recognition of infections, other than tubercular, in the treatment of pulmonary consumption. Once the by-infections are cleared up, the tubercular process becomes more amenable to treatment—the patient gains strength wherewith to struggle—mayhap successfully, and a cure is not an impossibility.

References.

Handbook on Tuberculosis.—Cornet.

Ztcher. f. Sub. in Heilstattenwes.—Peruschky. Jour. A. M. Assn., June 7, 1903.

Serum, Vaccines and Toxins.—Bonsauquet.

Personal Communications.—G. R. Pogue.

Personal Communications.—S. G. Bonney.

Die Behand. der Lung.—Schwind. durch Bekampf der Miscl. Infection.—A. Menzer.

Discussion.

Dr. J. J. Tremblay, Moline: We all get men women and children with tuberculosis, and I believe the colony should be right at home. In order to cure tuberculosis we must keep our patients from coming in contact with the germ, and to do that we will have to look not only at our materia medica, but we must destroy the germ that produces tuberculosis, and the only way to do it is to get a clean city, and get railroads to give us a clean station.

Some of you may think you never will have tuberculosis, but when you leave for home, and sleep in one of those sleepers on the train, you are quite liable to contract the disease. I have fought and tried to get physicians to get new railroad stations and better traveling conditions, but without avail.

One climate is just as good as another. We have not so many tuberculosis patients in the country as in the city. Let us have clean homes, and clean cities, and then we can cure tuberculosis at home.

Dr. J. W. Pettit, Ottawa: I want to commend all that has been said by the essayist. It is particularly gratifying to me that this question of tuberculosis needs only to be presented to insure a large and respectful hearing by physicians and laymen anywhere and everywhere. Any time prior to the past year it would not have been possible to get more than a corporals guard in any medical society to listen to papers such as have just been presented. It was because of this apathy and indifference to the subject that no progress could be made along this line. I am very glad this society has taken up this work. I am pleased to note the wonderful progress which has been made during the past year in arousing public and professional sentiment in this state.

This is a very large problem. It is easy to outline what ought to be done, but it is more difficult to do it. There are a few things which just at the present time must engage our attention and be placed before the people in their proper light; first, we must teach the people that climate cuts but little figure, although I do not believe we ought to go so far as to say that climatic conditions are to be ignored in all cases. As a rule the tuberculosis patient may be cured in the climate where we find him. This is particularly true of incipient cases. There are patients, however, who will do better in one place than another, but we cannot tell in advance to what particular locality to send him. The rule is in the several leading institutions of the United States, that where a patient is not doing well they send him somewhere else where the climate is in strong contrast. A few days ago I saw a patient at Dr. Trudeau's sanatorium who was doing remarkably well. He had spent nearly a year in the Southwest under the most favorable surroundings, but made no improvement until he was sent to Saranac Lake. Another patient will make little or no progress in the Adirondacks and do well elsewhere. Therefore, it will be seen that while climate is a factor in exceptional cases, as a rule it is practically unimportant.

The greatest need just now, if the modern treatment of tuberculosis is to accomplish what it should, is the necessity for an early diagnosis. We must discuss this feature of the subject in season and out of season. Ring in all the changes possible to engage the attention of the profession and people. It is not sufficient that we simply lengthen the lives of our patients, which is all that is accomplished in many of our advanced cases. From an economic standpoint this is of little value. We do not add to the usefulness of that life unless we cure the disease. This can only be assured by an early diagnosis. Advanced cases are not only difficult to cure, but require so much patience and perseverance on the part of physician and patient that they are apt to lose out in the fight; hence the necessity for an early diagnosis. I frequently have applications for the admission of patients to the Ottawa Tent Colony, where it is stated that they have tried everything else and failed, and as a last resort wish to test the efficacy of the open air

and dietetic treatment. To be of any value the modern treatment of tuberculosis must be made **first** and not the **last** resort.

I wish to call your attention to a little journal called the Outdoor Life, published under the direction of Dr. Trudeau. It is a very practical little journal and should be read by the doctor and given to his patients. It ought to be in the hands of every one under treatment for tuberculosis and used as a guide after his discharge. The fact that it is under the fostering care of Dr. Trudeau is sufficient guarantee of its character.

Dr. E. J. Brown, Decatur: The State owes Dr. Pettit a great deal for being a pioneer in this work. He has given fifty per cent of his time and ninety per cent of his energies, and money as well, treating these cases of tuberculosis in his Tent Colony. I think we can all urge him to introduce this treatment on a broader scale and put it on a basis from which he can derive an income.

A year and a half ago I had a patient, a working girl, making three dollars a week. She was in the incipient stage of the disease. I told her father that if he would advance her funeral expenses we could save her life. He could not see it in that light, and the girl died a few weeks ago. The loss in wages, medical treatment and funeral expenses amounted to $500, when it would have cost only about $150 in the early stage to save her life.

I have five or six patients now sleeping in second story out-door bedrooms with good results. The great trouble in private practice is the education of the patient, and the family. The girl I mentioned I educated to a certain extent. I spent at least an hour a week talking to her. I gave her all the literature I could find, I have magazine articles which I distribute among my patients, and I am going to advise "The Journal of Out-Door Life" to my patients. Educating the families is the most difficult task we have to do. The girl would go out of doors in the summer and improve, gaining ten or fifteen pounds, but when winter came on sat around the stove, and her mother stuffed up all the cracks to save coal bills, and the girl became rapidly worse and died. It is almost impossible to educate the family in this work. In fact, you cannot educate them, except in sanatoria where you have the patient under perfect control.

Dr. S. M. McClannahan,.....: I simply want to ask Dr. Gray whether by the title of his paper he means to make a distinction between tuberculosis and mixed infection in tuberculosis. To my mind, every case of tuberculosis is one of mixed infection. I have never examined tuberculosis sputum without finding quite a variety of bacteria other than the tubercle bacillus. If Dr. Gray does make a distinction between mixed and pure infections, I would like to know what that distinction is.

As to the rest treatment, putting the affected lung at rest; I have never done any work along that line, but Dr. Normal Bridge, of Los Angeles, has treated many cases in that way, and his results seem to be favorable. The treatment looks reasonable, and, in closing, I wish the essayists would tell us whether they have had any experience with it, or what they think of it.

Dr. Ethan A. Gray (closing the discussion on his part): There is a distinction between pure tuberculosis and mixed infection. The early cases, in the so-called pretubercular stages are, as a rule, free from virulent or foreign bacteria. I have examined numbers of specimens of sputum which contained occasional tubercle bacilli and found no other organisms or if present, they were so few and far between as to be negligible.

There is a difference in the treatment of a case after the bacteria have appeared. My patients improve markedly in the early stage. Their appetite improves and they gain in weight. Tuberculosis is a very slow disease per se; it is only when the bacilli are thrown into the circulation, infecting organs distant from the local nidus, that we have trouble. Of course, there will be a toxemia from the tubercle bacillus, but nothing in comparison with the toxemia resulting from the streptococci or staphylococci. When the latter appear we have the old-fashioned fever, and that is almost always fever of mixed infection.

In miliary tuberculosis we have an entirely different condition. Those cases run their course rapidly, but, I believe, that even in them we can find many other bacteria, because we have a mixed infection even there.

As to the treatment by lung rest, I know very little about it. The increased respiratory effort appears to be the work of Nature to clear out the toxins. After they have been done away with, and the repirations cut down from 38 to 18, we get all the rest we could ask for. Of course, much depends on educating the people, and how much authority you can exercise over them. Some patients will do exactly what you tell them to do, and the results in those cases are good. Others will do as they please, and the results are bad.

I believe in the sanatorium treatment. I think it is the ideal treatment, because measures can be carried out there that cannot be carried out in the home. But, no matter where he may be, every patient must be educated, watched and guarded if you expect to get results from any treatment of tuberculosis.

Dr. Wheaton (closing the discussion on his part): With regards to the antistreptococci serum in tuberculosis, especially late tuberculosis, I must confess that I am rather skeptical. I believe in the efficacy of the serum in carefully selected cases. The serum should not be administered unless streptococci have been demonstrated to be present, and the patient is suffering from that intense chill, more severe than the malaria chill, and more profound in its shock.

The campaign against tuberculosis is one of education, and must be worked out along sanitary lines. I believe in being frank with the tuberculosis patient. Knowing their condition,

and appreciating what treatment means to them, they will, after a time, co-operate intelligently with you, and endeavor to get well.

Railway trains, cars, etc., should be disinfected regularly. That is an important matter, and I hope that this society will, at some future time, appoint a committee to go to Springfield and secure legislation to run special Pullman tourists sleepers in which these patients can be transported, and at various points along the route they can be made to equip stations so that they can carry these patients when they are compelled to change cars.

Dr. Homer H. Thomas (closing the dicussion): It is very gratifying to have endorsed the essential principles in the treatment and prevention of tuberculosis. Evidently we are a unit today in believing that these principles are combined in those pure air, pure food, pure water, individual, indicated exercise, and climatic environment. That is a great step forward.

I wish, however, to dissent from one of the positions taken by a previous speaker with reference to the control of tuberculosis. I believe in absolute professional domination in the care and treatment of tuberculosis cases. Our present conception of the successful management of this disease is not an expensive one. It calls to the aid of the sufferer natural agencies which are free and therefore inexpensive. I think we lose professional prestige with our cases unless we absolutely have our own way in their management. I think that any compromise or compliance in the care of these cases is not only detrimental professionally to us, but unfortunate for the patient. Personally, I would much rather give up the care of any case of tuberculosis that would not do as I wanted it to do rather than to maintain an equivocal relation of compromise.

When the successful treatment essentially involves pure air, pure water and pure food, there should be no difficulty in securing these conditions for the poorest patient, and unless we do these, we are not doing our duty professionally in the care of the tubercular patient.

ENTRO-COLITIS.*

BY DR. H. J. NICHOLS. M. D., QUINCY.

In presenting this subject before you for your consideration I wish to state that I have no new light to throw upon it, nor neither have I made any new discoveries. But I offer it because it is one of the most common and fatal of infantile diseases and that it is most prevalent during the hot summer months. My remarks will be brief in order that the more experienced may speak.

Entro-colitis is a catarrhal inflammation of the lower portion of the small intestine—the ileum, and the upper portion of the large intestine with a great tendency to ulceration of the intestinal glands if the catarrh becomes chronic. It is characterized by moderate fever, nausea, vomiting, diarrhœa, swollen abdomen, pain and emaciation.

The most direct and common cause is improper feeding. But often it is due to high summer temperature, impure air and uncleanliness. In order that we may clearly get the subject before our minds, I shall briefly give the anatomy and physiology of this portion of the intestinal tract. There are four coats. Beginning from without inward they are as follows: Serous, muscular, submucous and mucous. The serous has the same structure as the peritoneum. The muscular coat is non-striped in character. The outer fibers are longitudinal and the inner fibers are circular. The submucous coat consists of connective tissue blood vessels, lymphatics and nerves. The mucous coat is composed of little folds called vavulæ conniventes. They increase the areal surface of this portion of the intestinal tract. There are also many little glove-fingered like projections, called villi, entering into the composition of this coat. They extend from the lower portion of the duodenum to the lower portion of the ileum and are peculiar to this section of the intestinal tract. Here the greatest activity in absorption goes on. We can readily see how any interference with this function will likely produce the disease under discussion.

The villi promote absorption through its network of capillary blood vessels and lacteals.

Entro-colitis may be acute or chronic.

In the acute variety there is hyperæmia, swelling, œdema and softness of the mucous membrane of the lower portion of the small and the upper portion of the large intestines with *hyperplasia* of the intestinal follicles. The patches of Peyer are also enlarged and tumefied and projected above the surrounding mucous membrance the orifices appearing as dark points.

In the chronic variety the thickening and infiltration extend to the submucous or mus-

cular coats. The tissues become indurated and oftentimes abnormally rigid. Oval and circular ulcers occur, having for their base the submucous or muscular coats. They are grayish white in color.

The symptoms may be acute or chronic. The acute variety may develop slowly with restlessness and fretfulness or suddenly with feverishness, loss of appetite and thirst, nausæ, moderate vomiting and abnormal pain or diarrhœa may be the first indication on the part of the child.

The stools have the following characteristic appearance: They are semi-fluid, heterogenous, grayish, acid, mixed with yellowish fragments of ordinary fæces and undigested casein, "chopped spinach stools." The abdomen is enlarged and tender. In marked cases the child is greatly emaciated and prostrated in a very few days.

The chronic variety usually follows the acute. The symptoms are not as severe, but decidedly persistent. The strength fails, the temper is very irritable, the complexion grows very dark, sallow and unhealthy and the skin is dry and harsh. The abdomen is enlarged and tender. The stools number from six to twelve in twenty-four hours and are mixed with imperfect digestion, mucous, serum, pus and oftentimes blood. The most common or frequent complication is ulcerated stomatitis.

Duration. The acute form may last from ten days to two weeks. The chronic may exist from one to three months.

Diagnosis. The acute variety can hardly be mistaken for anything else if the characteristic stools or other abdominal symptoms are given.

The chronic variety may be mistaken for the diarrhœa of tuberculosis. In order to prevent making this mistake the chest will have to be examined.

Prognosis. It is quite unfavorable to the weak in midsummer or when surrounded by bad hygenic conditions, but is quite favorable to strong and vigorous children who have passed through their first dentation.

Treatment. In the acute variety dieting should be strictly enforced. Give such food as milk with lime water or predigested. Of all articles of diet, pure milk is the best. Rest and pure air are very important.

A half grain of calomel with two or three grains of bicarbonate of soda may be administered every two hours until two or three doses are taken, especially when the exciting cause is due to improper feeding, then this may be followed by giving such drugs as bismuth subnitrate and salol. Local applications to the abdomen, such as the spice poultice or turpentine stupes are gratifying. "Few conditions will tax the skill and patience of the physician as will the chronic variety," so says Dr. Hughes.

Of course, to successfully treat this variety, dieting is also of prime importance. The child should if possible be carried to the mountains or to the seashore. Bathing is very beneficial.

The following drugs may be of service: Subnitrate of bismuth, silver nitrate, pepsin and aromatic sulphuric acid.

THE SECRET NOSTRUM EVIL.*

BY FRANK BILLINGS, M. D., CHICAGO.

I shall make no apology for bringing this subject before this section. Its importance to the profession of medicine and to the public justifies an exposition of the evil now. In no other country has this menace to the welfare of the people and to the best interests of scientific medicine developed as it has with us.

Probably the reason is that other countries, with one or two exceptions, protect the people against frauds in foods, medicines, etc.

Some day it is to be hoped that the Congress of the United States will enact a national pure food law which shall include the regulation of the copyrighted and exploitation of proprietary and other medicines.

Just here it will be well to say that the term "proprietary medicine" does not necessarily stamp a preparation or remedy as

*Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

a nostrum. Webster says that a nostrum is "a medicine, the ingredients of which are kept secret for the purpose of restricting the profits of sale to the inventor or proprietor; a quack medicine." Some proprietary medicines are patented, or better, the process of manufacturing an article is patented. This patent protects the discoverer, or owner, in the manufacture of the medicine or drug for a period of seventeen years. These preparations are ethical, in that they are not secret, for any one for a small fee may obtain from the patent office of the government a copy of the description of the process of manufacture and the actual chemical composition of any such patented drug or remedy. The chief harm which has come to us in America from the protection by patent of the process of making a chemical or drug has been the resulting high price of the product. Many of the synthetic chemical drugs, like antipyrin, phenacetin, etc., cost ten times their worth as compared with the price of the same drugs in Germany and in other countries. As stated, however, such really patented preparations are not secret; the composition is known. Some of them are of value therapeutically. Many of them are valueless. Some of them are harmful. Most of them we could easily get on without and fare better with the older, more simple remedies. Too many "made in Germany" specifics are shoved under our noses.

Now, as to the other proprietary medicines. All the so-called "patent medicines" put on the market for the public, and many of the preparations exploited to physicians and distributed by them to the public, are not patented, but are protected by a copyright or trade mark. Technically there is no difference between the secret proprietary medicines manufactured for physicians' use and the "patent medicines" exploited to the public. Both are protected by copyright or trade mark name. Both are protected for an indefinite time. They are mixtures, as a rule, of several ingredients.

The relation of the physician to these preparations, however, is very different. Those "patent medicines" which are advertised to the public are not considered ethical and physicians abhor them and rightly condemn their use because they are often dangerous and always irrational as remedies. On the other hand, the manufacturers of those copyrighted proprietary medicines which are exploited to physicians by extravagant claims of specific therapeutic action, use the doctor as the middle man to distribute the cure-alls to the public.

Medicines so prepared that the busy physician could easily dispense them found a certain class of doctors eager to use them. The indications for use appeared on the label or in the accompanying literature. Tonics, blood and tissue builders, emenagogues, pain relievers, febrifuges, laxatives, calculi dissolvers, soporifics, bile promoters, heart tonics, cures for Bright's disease, etc., have appeared in countless number and some remedies offered are confidently presented as cures for not one but half a dozen diseases or symptoms complex. Indeed, the claims of many of the promoters of this class of remedies do not differ in extravagance from the cure-all patent medicines offered directly to the public.

It has been easy to obtain testimonials of the alleged value of many of these remedies. Many even of the "faculty" have extolled them. Why, therefore, should not the less experienced physician use these "elegant," palatable, all-ready-to-use, with label-specifying-dose, disease-indicating remedies? Prominent physicians and the "faculty" had testimonials in the circular sent with the samples indicating the virtues; why, therefore, use the simple proved remedies of the pharmacopeia, and especially as the latter would often necessitate the trouble of writing a real prescription.

To the rational physician most of the mixtures, even with the formulæ, are objectionable. Disease is never quite the same in different individuals, nor does the picture remain the same from day to day. The treatment must be modified to meet the varying problem of the morbid process. Rational therapy calls for simple prescriptions; but if there be an objection to mixtures with fixed and known formulæ, what must one

say of mixtures of secret or semi-secret composition?

As Dr. Horatio C. Wood, Jr.,[1] says:

A much more elusive and therefore dangerous evil lurks in the class of mixtures which attempt to cloak their secrecy with a deceptive show of frankness. I think you will grant that the physician is rarely justified in the use of remedies concerning which he has no knowledge, and I maintain that the publication by a drug firm, of whose integrity the physician is absolutely ignorant, of a professed list of ingredients of some mixture is not sufficient knowledge to pardon or to warrant the uses of that remedy. In the first place, if the published formula be correct, it is not enough to know simply the composition of a mixture, the exact quantities must also be known; there is a vast difference between the effects of 1 grain and of 100 grains of opium. Moreover, there is no means of knowing that the formula is a true one, for many of these corporations do not hesitate to pervert the truth.

Many of the promoters of these preparations claim, as chemists or as pharmacists, to be the discoverers of the wonderful remedies and the alleged unusual knowledge of chemistry or of skill in pharmacy has enabled the discoverer to develop in a mixture heretofore unknown, therapeutic qualities. Truth to tell, however, it is known that the proprietors are not always the manufacturers of the preparations they exploit and distribute. Many of the proprietary preparations are made by the large manufacturing pharmacists for the owners. Pharmaceutic skill is doubtless used in these instances, but it is the kind of skill which is for sale and is not personal.

I am informed that it is not unusual for one manufacturer of proprietary mixtures to have several so-called "companies," through which he can more easily exploit and distribute his products.

There is said to be a direct relation between the Dad Chemical Co., the Od Chemical Co., the Sultan Drug Co., the Rio Chemical Co. and the Peacock Chemical Co. or at least that they are linked together through one individual, and that Battle & Co. and the Lambert Pharmacal Co. are related to the above list. It is said, too, that the Vass Chemical Co., the Lotos Chemical Co. and the Valley Chemical Co. are one combination. Doubtless other combinations exist.

Curiosity recently prompted me to look through a number of medical journals and I can not resist the temptation to quote some of the preparations advertised in them: Aletris Cordial, Celerina, Neurilla, Respiton, San Metto, Cactina Pellets, Seng, Chionia, Thialion, Zarcol, Ecthol, Hagee's Cordial of Cod Liver Oil Compound, Mandragorine Tablets, Rheumagon, Ponca Compound, Ammophenin, Chloro-Bromon, Anasarcin, Bronchiline, Zematol, Zymoticine, Sulphogen, Labordine, Satyria, Manola, Cacodol, Eusoma, Leprosen, Sulpho-Napthol, Pasavena, Neurosine, Germiletum, Bonn's Passiflora Tablets, Dioviburnia, Tongaline, Lithiated Hydrangea, Melachol, Gonoseptone, Solsul, Saliodin and so on *ad infinitum*. These are only a few samples of what the physicians of the United States are asked to prescribe. But there are hundreds of secret preparations that are not advertised in medical journals whose literature and samples come to us through the mails, etc. In the majority of cases, we do not know their contents, and in many instances an analysis shows that they are simply mixtures. Often a prescription written by a physician for a particular case is purloined, put up under a trade-mark and exploited as a cure-all.

As an illustration see the official announcement of the Council on Pharmacy and Chemistry regarding certain nostrums that have been exploited as synthetic chemical preparations guaranteed to cure everything. I have no doubt that the majority of the physicians who have been prescribing phenalgin, antikamnia, sal-codeia (Bell.) and ammonol were shocked when they found out that, according to analyses, they had been giving a simple mixture of acetanilid, with bicarbonate or salicylate of sodium or carbonate of ammonium, with a little caffein in some instances. What physician will be foolish enough to use these preparations when he can get the same of his druggist for at most one-tenth the cost, but especially what physician with a particle of medical knowledge would think of giving acetanilid if

1. "Proprietary Therapeutics," The Journal A. M. A., June 10, 1905, p. 1836.

he knew it, in the majority of the conditions in which, according to the advertisers, these nostrums are indicated?

What physician would prescribe Gray's glycerin tonic, if he knew that its chief ingredients are gentian, dandelion, glycerin and sherry wine?[2] Could he not write a prescription as good and feel that he was his own judge of what constitutes a tonic?

Let me quote from THE JOURNAL A. M. A.[3] This, I am told, refers to an article advertised as a cod liver oil preparation—one of the tasteless kind, that has been investigated by a sub-committee of the Council:

> We have recently had occasion to open a package of a well-known "Tasteless Cod Liver Oil" preparation. The circular which was wrapped about the bottle was replete with interesting information, especially for the patient, who obtains the remedy in the original package, as prescribed by his physician. He finds in it a list of diseases in which the preparation does wonders—they range from the dread consumption to cystitis and hemorrhage of the kidney. Most interesting to us, however, is the statement that this compound "contains all the necessary elements of nutrition." It is too bad to disturb the beautiful vision by the report of the chemist. This shows that the product is quite free from oil or proteids; the only nutrient ingredients are alcohol, sugar and perhaps glycerin. But the claims of the manufacturers are probably correct, for it contains carbon, hydrogen, oxygen and probably a trace of nitrogen—so does gunpowder.
>
> Perhaps it will now be the turn of strychnin to be advertised as the ideal food. It seems superfluous to point out the moral of this tale.

It is not necessary to enter into a discussion as to whether we should ever prescribe secret proprietary medicines, for in the minds of intelligent men, even with only a smattering of medical knowledge, there can be but one answer. A physician who has a true appreciation of his responsibilities, who has even ordinary knowledge of the action of drugs, and the danger from their unintelligent use, would not think of prescribing for the sick, who have been placed under his care, a preparation about which he knows nothing except what the manufacturer, about whom he knows less, has told him. While there is no excuse for prescribing these medicines, too many unthinking physicians are influenced to do so by the claptrap designated "literature," which the exploiters publish about their preparations.

There is not a secret proprietary preparation that has any more value, from a pharmaceutical or therapeutic standpoint, than has the ordinary prescription of the average general practitioner. Stop advertising them and they would be forgotten, just as "patent medicines" pass away if they are not advertised. A hark back ten or fifteen years will call to mind many concoctions which physicians were asked to prescribe, and which according to the advertisements, performed wonders, but now are heard of no more. Their advertising literature stopped coming and the nostrum-prescribing doctor ceased to use them.

What is the cause of the nostrum evil? There are several.

1. Pharmacology and therapeutics are neglected relatively by many of our medical schools. Anatomy, physiology, pathology, diagnosis, etc., are emphasized and too often the usefulness and limitations of drugs are neglected. Too frequently drug nihilism is taught. If the student were fully taught the physiologic action of drugs, the art of prescribing, preferably single remedies or in simple combination, using if he desires the pharmacopeial preparations prepared by reliable manufacturing pharmacists, and at the same time if he were taught when not to rely on drugs, but frankly to prescribe for his patient a course of hygienic measures which alone would accomplish all that would be required, he would not be the willing dupe of the nostrum vendor, as he now is:

2. The reputable manufacturing pharmacists deserve great credit for the improvement they have made in pharmaceutical products. They have afforded us official preparations in the form of pills, tablets, syrups,

2. "Each half ounce is stated to contain dilute phosphoric acid, 12 minims; gentian root, 10 grains; extract of taraxacum, 15 grains; glycerin, 80 minims; sherry wine, 80 minims; carminatives, q. s."—"Thesaurus of Proprietary Remedies," p. 148.

3. June 17, 1905, p. 1943.

tinctures, extracts etc., which are elegant in appearance, often palatable and usually potent.

For this advance in pharmacy, a distinct credit to our country, we owe them our thanks.

Unfortunately, many of them have not stopped at this point, but have manufactured their own special mixtures which are just as objectionable as the products of the special manufacturers. They, too, have been active with their agents in visiting physicians and in distributing "literature." This encourages drug-giving in specific mixtures for special symptoms, and is wrong. With one hand they do good work, with the other much evil is done.

3. The nostrum makers at first copied the methods of reliable manufacturing chemists, in exploiting their products, but they have gone a step further and have reached a point where one may say that they have subsidized the medical press. I know I am on dangerous ground when I make this statement, but right here is the chief cause—and the remedy. How many of our so-called medical journals are subsidized by medicine manufacturers I do not know, but all physicians know as well as I that there are many, and I do not refer to the so-called house organs. I unhesitatingly affirm that one-half of the medical journals of the country would be out of existence if it were not for nostrum advertisements. Under the circumstances, therefore, can we expect these journals to say anything? Need we be surprised that scarcely a journal published the official report regarding the acetanilid mixtures, when the preparations hit were the best paying advertisements in the country?

What is the remedy? Publicity. The enlightment of the profession. The truth regarding not only what the preparations contain, but who makes them. Certainly no honest manufacturer will object to this last proposition, and no honest physician will put up with less than the former.

The Council on Pharmacy and Chemistry has been created to investigate the non-official preparations, to find out the truth about them, and to publish its findings. It is not necessary to repeat here the results of the work already done by this body. All physicians have read, or may read all about it. In my opinion there has been no movement undertaken by the American Medical Association that will be so far reaching as this one to rid us of the blight of the nostrum evil. For the first time, we see the possibility of the elimination of a part, at least, of this curse to American medicine. It is the first practical solution offered of a most difficult problem.

But—and I want to emphasize what I am about to say—the movement will have the most determined opposition that money can bring. Millions are being made annually by the nostrum manufacturers, and they will not sit down idly and see this wealth-producing business done away with if they can prevent it. It won't be an open fight, for their business will not stand publicity. They will have with them those so-called medical journals which are published solely in their interests.

This movement will have the sympathy of every thinking physician of the country, but sympathy does not win battles. In this fight those who are representing us should have all the support we can give. In society meetings especially we should aid in the propaganda by helping to enlighten and to interest those of our profession who have given the matter no thought. We should support those journals that represent us, and not tolerate in our offices those that we know to be subsidized and to represent their advertisers rather than their readers.

THE INJECTION OF AIR INTO THE CIRCULATORY SYSTEM OF ANIMALS.*

BY EZRA READ LARNED, M. D., CHICAGO.

Unless I am much mistaken, most practitioners of medicine believe that the accidental injection of even a small bubble of air will be followed by very serious conse-

*Read at the meeting of the Chicago Medical Society October 25, 1905.

quences. The technique of many operations is modified because of this superstition, and the simple operation of administering medicine subcutaneously by means of an hypodermic syringe is looked upon as a serious matter, and students and nurses are cautioned to see that all air is excluded from the needle before it is allowed to penetrate the skin of the patient to obviate the great danger of the injection of air into a vein accidentally. That medical practitioners believe in the verity of this danger is not to be wondered at when standard medical books are consulted. Most of the older books teach this idea. The beneficent results of antidiphtheritic and certain other sera have been modified, owing to a few cases of sudden death soon after such administration, being charged to air embolism.

Rose and Carliss Manual of Surgery, sixth revised edition, 1905, on page 289, says the entrance of air into veins, though rarely met with, is fraught with the utmost danger to the patient. The air becomes churned up in the cavities of the right side of the heart, forming a spumous frothy mixture amongst the columnæ carneæ, which the heart can only with difficulty eject; thus the circulation is brought to a standstill in spite of forcible contractions and the patient dies from anemia of the lungs and brain.

On page 76, referring to injuries of the intra-cranial blood vessels, the statement is made that the entrance of air has led to a fatal issue in a few cases.

In the International Textbook of Surgery, Vol I, edition 1903, page 898, in the chapter referring to injuries of blood vessels, are several paragraphs with regard to air embolism, and the statement is made that the entrance of air into the circulation, aside from where it enters the uterine sinuses, occurs exclusively after injuries to the veins, especially those of the base of the neck. It states that the air rushes in with a peculiar hissing sound, and if in sufficient quantities, death is almost instantaneous. Single small bubbles of air are not necessarily fatal. Death is due to the air collecting in the right side of the heart and preventing the contraction of the right ventricle, which finally stops the heart in diastole.

In Von Esmarch's Surgical Technique, edition 1903, p. 649, referring to operations for cervical tumors, occurs the statement that injuries to veins is almost the principal danger, partly on account of violent hemorrhage, partly on account of the possibility of air entering the veins, accidents that may cause instant death, air embolism and cardiac insufficiency.

On the other hand, Von Bergmann's System of Practical Surgery, edition of 1904, Vol. II, of the English translation, on page 55, chapter on injuries of veins in the neck, says wounds in the neck are life endangering accidents, owing to hemorrhage and the possibility of air entering the veins. On this and the succeeding pages is a description of the symptoms accompanying the entrance of air into veins, as follows: In the majority of cases the entrance of air is accompanied by an intermittent hissing or gurgling sound. At the same time, or a few minutes afterwards, symptoms referable to the heart and the breathing appear. The patient turns pale, has an anxious expression or screams, the breathing becomes more difficult, the pulse weak, frequent and irregular, pupils are distended and do not react, consciousness is lost, convulsions and death closing the scene. Statistics collected in 1864, of sixty-four cases, show that twenty-four died instantly or within a short time, that twenty-seven recovered after showing alarming symptoms and in nine no influence on the general condition was observed. This authority admits that this result is not the rule. The symptoms subsided in a portion of the cases and complete recovery may take place even if the symptoms have been severe. Von Bergmann further states that this accident, formerly so dreaded, seems to have become less frequent in late years, and gives as a reason the improvement in technique and improvement in operative conditions, such as complete anesthesia. Reference is made to animal experiments, but with the

qualifying statement that conclusions arrived at were not uniform.

In the American Textbook of Physiology, page 389, in the chapter on circulation, reference is made to the danger of entrance of air into a wounded vein, accidents commonly followed by immediate death for reasons not here to be discussed. Further on, it states that when air is thrown into a vein, the blood and air enter the heart together, possibly with deleterious effect.

In the American Textbook of Surgery, edition 1899, page 1072, is a reference to air embolism in which the statement is made that it is a danger to be avoided and that death is the not infrequent result. It speaks of numbers of experiments having been made to determine the cause of death, and that the conclusion of the experimenters is that the air finds its way into the right side of the heart, and being elastic, the right ventricle cannot empty itself and the result is anemia of the brain, followed by syncope and death.

Malcolm Goodrich, American Journal of the Medical Sciences, states, in a paper discussing this subject, that entrance of air into the veins, even in small amounts, is to be dreaded, as it may result in death. He states that any teaching to the contrary is pernicious and not supported by facts.

Let us see whether they are or are not supported by facts.

Personally, I believe these conclusions are entirely unjustifiable and that air embolism is not necessarily fatal, or even attended with grave results and that teaching to the concontrary is unwarranted and not based upon facts. In the manufacture of antidiphtheritic serum, it occasionally happens that a horse is paralyzed from the influence of the diphtheria toxin. In such cases it has been our custom to kill these horses with chloroform. Three horses so paralyzed were used as subjects for experimental air embolism.

Experiment No. 1. In this horse, 20 cc. of air were injected into the jugular vein; after five minutes, a second injection of 20 cc. without effect; after another five minutes, 40 cc. injected without effect. After another five minutes, or twenty minutes after the first injection, we injected 160 cc. into the jugular vein.

The only symptoms we could discover were mere labored breathing, which after a time passed away, leaving no effects whatever.

Experiment No. 2. Horse. 300 cc. of air were injected promptly into the jugular vein. After one minute there was quickened respiration with spasmodic contraction of the muscles. After four minutes, hiccoughs which lasted ten minutes. After fifteen minutes, uneasy but slower respirations with an occasional hiccough. Two hours later the horse had entirely recovered. Several hours after this, we injected 600 c. c. into the jugular vein of this horse. After one minute there was spasmodic respiration, the horse acted as if it were choking. There was profuse respiration. The temperature fell 0.4°. After ten minutes the symptoms had entirely disappeared, and the horse was as before. Fifteen minutes later, we injected 1200 cc. of air. The horse was quiet. Breathing almost stopped. Later the breathing had stopped for ten seconds, then continued normal for a few minutes. After waiting a half hour and no further symptoms at all, the animal was dispatched with chloroform.

Experiment No. 3. Horse. In this experiment we made the attempt to kill the horse by the injection of air into the veins in the following way. A 2000 cc. graduate was arranged in the form of a Spritz bottle, i. e., a large rubber stopper was placed in the mouth of the graduate with two glass tubes leading into the graduate through the stopper. To one of these tubes was attached an ordinary rubber bulb; to the other a piece of rubber tubing, armed at its distal end with a veterinary hypodermic needle. Between the needle and the glass tube was a screw clamp which prevented air from passing from the graduate through the needle until the desired moment. We first pumped as much air into the graduate as was possibly by squeezing the bulb, calculating that

the pressure was something over twenty-five pounds to the square inch. This would mean that the graduate contained several times more air than it would under ordinary atmospheric pressure. The needle was then pushed into the jugular vein of the horse, the clamp released as quickly as possible, and the compressed air in the graduate allowed to rush into the vein.

Very soon the animal showed symptoms of dyspnœa, staggered, showed some hiccough, but after several minutes presented practically the same appearance as before the air was injected. We were surprised that this extraordinarily large volume of air, forced under pressure into the circulation, should not have killed the animal. In order to determine whether or not this was possible, the animal was finally dispatched by pumping air into the veins for a considerable length of time. The detailed notes of this experiment were unavoidably lost, so that we do not know exactly how long the air was pumped into the veins before the animal died, but it was certainly a very long time. It seems to me that this test demonstrates that a very large volume of air, in this instance it was several liters, may be injected into the jugular vein without producing death, but it is, of course, possible to produce death in a horse by deliberately injecting exceedingly large quantities of air. On the other hand, please consider that it frequently happens in the injecting and bleeding of horses used for the production of serums, that quantities of air enter the circulatory systems of these animals without producing any deleterious results whatever. This is such a common occurrence that we have come to look upon the question of air embolism, that has been so frequently claimed to have been produced by accidental injection of air into the circulatory system during operations on the veins, as being decidedly far fetched, to say the least.

Experiment No. 4. Dog, weighing about twenty pounds. The jugular vein was laid bare, and using a 20 cc. syringe we injected sixteen of these syringefuls, one after the other, or a total of 320 cc. of air. After one minute, labored breathing set in. In fact, the symptoms were practically the same as in the horse, dyspnœa. Two minutes after the injections were stopped the animal recovered, and the normal breathing was re-established. Allowing the dog to rest for one hour, the injections were repeated as before with practically the same results.

Experiment No. 5. Rooster. A small bubble of air was injected into the veins. No apparent effect. Then 1 cc. was injected. The patient became somewhat dyspnœic, acted as a chicken does that has been run rapidly for some distance, gasped for air a few times, then recovered entirely.

Experiment No. 6. A guinea-pig, standard weight. Small bubble of air injected into the jugular vein. After three minutes, 1 cc. was injected, quickened respiration being apparently the only effect. Animal recovered entirely. These experiments we repeated on other animals with identical results in every case, with one exception.

Experiment No. 7. A small rabbit, weighing two pounds, was taken, into whose jugular vein we injected 20 cc. of air as quickly as possible. Decided effect at once; quickened respiration, spasmodic contraction of the muscles. After two minutes, the respiration became less and less frequent, stopping three and three-fourths minutes after the commencement of the experiment in the death of the animal. Bear in mind that in this small rabbit we injected 20 cc. of air instantly, and that a corresponding amount for a forty-pound child would be 400 cc.

Conclusions: In conducting the seven experiments I referred to, one is strongly impressed by the similarity of the effects observed to those of dyspnœa. The air entered the heart and remained there as an air embolus, as some one called it, stopped the circulation, or it passed the heart and formed air emboli in the branches of the pulmonary artery, thus for the time being, shutting the blood off from that part of the lung supplied by that particular vessel and the animal became dyspnœic. It is easy to see that if *enough air* is injected, the cir-

culation in the lungs may be so nearly stopped as to cause death, but one or a few bubbles of air will merely temporarily close a few of the branches of the pulmonary artery. This would be absorbed by the blood in a very short time, especially as it is in contact with venous blood under arterial pressure. In ordinary hypodermic medication or the injection of sera, I believe the danger from air embolism is absolutely nothing. In our laboratory in the past ten years we have made literally thousands and thousands of such injections into rabbits, guinea-pigs, rats, mice, dogs, horses and other animals, and have yet to see any harm come from them. If we must have a name for the cause of sudden death following the injection of serum, why not acknowledge our ignorance in the matter and call it "shock."

Pirogoff, as well as Laborde and Muron, has slowly injected large quantities of air into the external jugular vein of animals with impunity, and death took place only when from 100 to 200 grammes of air were injected rapidly.

Uterhart came to the conclusion that large quantities of air, 300 grammes, could be injected without damage into veins situated some distance from the heart.

Chauveau was able to introduce large quantities of air into horses without particular effect. Binay and Couty found that up to 100 grammes of air could be injected into dogs at one time or in small quantities at intervals without fatal effect.

I think that the recitation of these experiments, reinforced by the reports of Senn and Hare, show that even a large air embolism is not nearly so dangerous as a small air embolus has been thought to be, and has been taught;- that the danger of air embolism is slight. Since massive injections in horses and dogs are not necessarily fatal, there is no reason for asserting that minute air emboli in man are deadly, although it is possible that large quantities of air, such as eight or nine hundred cubic centimeters, would produce disastrous effects, if it could find entrance to the jugular vein of a man.

Now, referring to Nicholas Senn's Experimental Surgery, and his remarks therein on air embolism—(The classical experiments of Senn are the most exhaustive, carefully conducted, scientific experiments of which we have any published account). The following brief abstracts are made from this work:

Experiment No. 1. Dog, weight sixty-five pounds. Injected 30 cc. of air into the left jugular vein. Churning sounds over cadiac region loud and distinct. Heart's action became very tumultuous and intermittent. Respirations superficial and labored. The animal was bled from the distal end of the jugular vein to the amount of four ounces, whereupon the heart's action became regular and the respirations diminished in frequency. The vein was divided completely and both ends tied with fine catgut ligatures, the wound being closed in the usual manner. For a number of days the dog appeared quite unwell, showed no disposition to eat and acted very stupidly, being inclined to sleep most of the time. Subsequently he recovered completely. In this case the intravascular pressure was promptly relieved by free bleeding, which enabled the heart to force the air through the pulmonary into the general circulation. The stupid condition of the annimal was undoubtedly due to embolism of the cerebral veins, which disappeared after the disappearance of the air emboli by absorption.

Experiment No. 2. Dog, weighed thirty-five pounds. Before operation, respirations 40, pulse 140. Injected 20 cc. of air into the right jugular vein. Convulsions followed, which lasted for about two minutes. Respirations rapid and stertorous. Pulse 300. After five minutes the animal made repeated attempts to get up and walk, but invariably fell down on account of imperfect control of the movements, or paralysis of the posterior extremities. About an hour later, the animal was able to walk, but appeared very feeble. Pulse 124, respirations somewhat accelerated. Recovery was complete. In this case, the equilibrium of the circulation was soon restored, and the air in the right side of the heart forced through

the pulmonary into the general circulation in a very short time, as was evident from the presence of symptoms indicative of embolism of some of the veins in the cerebro-spinal centers.

Experiment No. 3. Dog, weight seventy-five pounds. Injected 60 cc. of air into the right jugular vein. Churning sounds loud and distinct. Heart's action labored. Respiration exceedingly rapid, later, stertorous. The animal recovered rapidly from the immediate effects of the air embolism and was soon as well as before the operation.

In these experiments you will note that all the animals recovered after large injections of air into the circulatory systems. In some of Senn's experiments the animals died, as for instance—

Experiment No. 4. Sheep, weighing one hundred and twenty pounds. Left jugular vein. The vesel was opened in its lower third, but no air entered. A rubber-tube was introduced for a distance of two inches, with a view to facilitating the spontaneous ingress of air, but this accident failed to occur. Air was injected at intervals of eight minutes, in quantities of 30 cc. each, until the enormous amount of 480 cc. had been introduced. After the first injection nothing was observed that indicated the presence of air in the veins or the heart. After the second dose, a slight splashing sound could be heard over the cardiac region, which became louder and more distinct as the amount of air in the right side of the heart increased. The first serious symptoms observed were a tumultuous action of the heart and difficulty in breathing, which became aggravated by every subsequent injection. Towards the end of the experiment, which lasted nearly two hours, the animal was attacked, at short intervals, by general convulsive movements. After the suspension of respiration, the heart's action became very slow and feeble, and at times irregular. The immediate cause of death was plainly due to asphyxia, as manifested by the great dyspnœa and the cyanotic hue of the visible mucous surfaces. On examination after death, a few air bubbles and only a small amount of dark blood was found in the left ventricle. The right ventricle was arrested in diastole and contained a large quantity of very dark, almost black, spumous blood. Air bubbles were found in a number of distant arteries of small size.

Experiment No. 5. Adult, large cat. In this instance the canula was introduced and tied in the left jugular vein. The heart was exposed before the injection was made with a view of observing directly the effects produced by sudden inflation of the right cavities of the heart. Before the air was introduced, the heart contracted regularly—artificial respirations being made for the purpose of preventing death by asphyxia. As soon as the right side of the heart was dilated by the air, the left auricle and both ventricles ceased to contract, while the right auricle continued to pulsate. The pulsations were feeble and irregular. The coronary veins became filled with air bubbles, presenting the appearance of a rosary. On opening the superior vena cava, air and frothy blood escaped, the right side of the heart collapsed and all chambers of the heart commenced to contract regularly and with considerable force. The pulsations continued for fifteen to twenty minutes, becoming more feeble and irregular and intermittent towards the last. After death, air was found in both venæ cavæ and the iliac veins. The left ventricle was completely empty. In this case, owing to the small size of the heart and the large amount of air introduced, the contractions of the right ventricle were arrested in the diastole, but respiration continued. Death took place suddenly from overdistension of the heart.

Experiment No. 6. Medium sized cat. Injected 15 cc. of air into left jugular vein. Heart's action arrested at once. The respirations, which were irregular, ceased a few moments later. The chest was opened at once. The right side of the heart was found enormously dilated and almost motionless. Coronary veins filled with air. The right ventricle was punctured with the needle of an aspirator and its contents withdrawn, when the pulsations were re-established. The ventricle was again inflated through the needle of the aspirator. Five minutes after this injection

the pulsations numbered about 250 per minute. Five minutes later the left auricle ceased to contract, the movements of the right being irregular and about 80 to the minute. After the lapse of another five minutes the pulsations of the ventricle were only 17 a minute and a little later all movements ceased. This experiment demonstrates that the arrest of the heart's action was due to mechanical overdistension, as aspiration of the right ventricle was followed by regular and strong contractions of the cavities of the heart. The contractions were not the result of the mere mechanical irritation of the heart by puncture, as other and equally severe irritants had been previously applied without producing any effect.

Senn's conclusions are that his experiments tend to prove the following statements:

1. A small amount of air in the right side of the heart in a healthy animal gives rise only to temporary symptoms referable to the heart's action and the pulmonary circulation.

2. When air has been injected into the right side of the heart in such quantities as not to arrest the contractions of the heart itself, it is forced through the pulmonary capillaries into the left side of the heart by the contractions of the right ventricle.

3. The danger attending the insufflation of air into veins is proportionate to the amount of air introduced, as well as to the capacity of the right ventricle to resist intracardiac pressure.

4. When a fatal dose of air has been introduced into the circulation, death takes place almost instantaneously from arrest of the heart's action, or later from suffocation.

5. Spontaneous ingress of air into a wounded, healthy jugular vein never occurred in these experiments, and must be considered almost a physical impossibility, as the resilient walls of the wounded vein collapse readily when exposed to atmospheric pressure.

Hare, Therapeutic Gazette, 1889, page 606; American Journal of the Medical Sciences, October, 1902, deliberately injected air into the jugular veins of dogs for the purpose of seeing how large quantities could be borne without producing death and demonstrated his conclusions from these injections to the medical students of Pennsylvania University, where he was then teaching; to several of his colleagues; and finally, to the Philadelphia Medical Society. On this occasion Hare injected 60 cc. of air into the jugular vein of a small dog weighing twelve pounds without the production of any symptoms whatever. Hare reports experiments on some seventy dogs, and asserts that even large quantities of air do little, if any, harm. Hare also states that he has injected a considerable amount of air, amounting to as much as two to three cubic centimeters, into the median basilic veins of two human beings without producing any symptoms whatever, while a third patient who received a similar dose, afterward had a decided rigor, but no other untoward symptoms.

Dr. Larned (in closing the discussion) said: I wish to thank Dr. Ochsner for his complimentary remarks; also the members of the Society for their close and marked attention during the reading of my paper. In one respect the remarks of Dr. Ochsner puzzle me somewhat. I have referred especially to one experiment on a dog, where we injected the equivalent of 400 c.c. of air to a forty pound child. This was injected suddenly under pressure. I think, as Dr. Ochsner does, that there is absolutely no danger from small amounts of air injected through the canula of a hypodermic needle or any other needle that is used for such purposes. The hypodermic needle used by veterinary surgeons is large as compared with the ordinary hypodermic syringes.

In the case Dr. Ochsner cites, I judge from his remarks that he attributes the cause of the sudden death of his patient to the fact that the ventricle was unable to empty itself of air, probably from the air being elastic. This, I understand, is the old idea; and there have been a number of experiments made which seem to disprove it. There are some things that are contradictory in this matter. For instance, in the case of Dr. Ochsner referred to, where the patient died from severing of the jugular vein during inspiration. He does not say how much air was introduced into the vein, but he thinks it was a large quantity. I have reported one experiment, which was selected from a number of them as typical, where 400 c.c. of air would have been given to a forty-pound animal without any effect whatever. I think that much more air was injected in this case than would ever be injected in the course of any operation. In our experiments it was injected suddenly, deliberately, and under pressure, without any effect.

THE EFFICIENCY OF SALICYLATE OF SODIUM IN INFLAMMATORY EYE DISEASE.

BY DR. H. GRADLE, CHICAGO.

All modern text books on the eye reccommend salicylate of sodium more or less definitely in the treatment of different inflammations, especially scleritis and iritis. But as a rule they do not give any exact information as to what can be really accomplished by means of this agent. Although a few reports have been published in ophthalmic literature—for instance by Chisholm, Gifford, and the writer specifying the efficiency of salicylate, its great value does not seem to be recognized fully by ophthalmic surgeons and certainly not by the profession at large.

Salicylate of sodium exerts its influence only if given in large doses. An adult requires at least 8 to 10 grams (120 to 150 grains) per day or, Gifford puts it, 1 grain per pound of body weight in the twenty-four hours. Smaller doses are not merely less efficient, but often fail completely. These large quantities are of course disagreeable. They cause as a rule more or less ringing in the ears, often a feeling of confusion and sometimes a moderate prostration, but never any dangerous effects. In children I have seen slight delirium. Irritation of the stomach is quite uncommon when the drug is given in the form of coated tablets while solutions may prove nauseating. But all these annoyances cease soon on stopping its use. In most cases—with the exception of sympathetic inflammation a faithful trial of such large doses for two or three days will show enough influence over the disease to encourage the patient to continue its use, while if it does not show its benefit by this time it is generally useless to persist. When its annoyance proves too great it can be given intermittently with an interval of a day and a half after two or three days' steady administration.

Salicylate of sodium does not act specifically on any one eye-disease in the sense of arresting it promptly and in every instance. Yet its effects are so pronounced in shortening the course of various inflammations that the writer considers it, when applicable, the most useful agent at our command for internal use in ophthalmology, with exception of specific treatment of syphlitic lesions. Its influence is least pronounced in diseases with a fairly typical self-limited course, but often striking in lesions of indefinite duration. My personal experience with salicylate of sodium extending over many years has taught me its utility, but also its limitations in the following range of diseases.

Non-suppurative tenonitis, inflammation of the capsule around the eye-ball, a rather rare disease, seems to run a self-limited course ranging from about one week and a half to three or four weeks according to its severity. In every one of five instances seen, the symptoms began to subside so decidely upon treatment as to create the impression that salicylate of sodium had shortened the duration by perhaps one half the time.

Episcleritis is a disease of indefinite duration, very apt to last weeks and months when not efficiently treated. I have always spared the patient needless annoyance by not ordering salicylate of sodium until I had tried the customary local treatment with insufficient success, as very quick results are sometimes obtained by local measures alone. The effect of salicylate of sodium cannot be foretold accurately in episcleritis. In many instances the disease existing for weeks disappeared in three to six days, in others more slowly. It was exceptional not to find a distinct influence in episcleritis.

In the deep form of scleritis, a rare disease with us, of which I have not treated many instances, the agent diminished promptly the intensity of the symptoms, but I was disappointed in observing as a rule very little progressive improvement and only a few patients gave me the opportunity to terminate the disease by means of salicylate of sodium.

Of diseases of the cornea the type I have

found to react most promptly to salicylic treatment is that of small circumscribed infiltrates in the substance of the cornea without tendency to ulceration, either single or multiple. The former are mostly of traumatic origin. In all such cases I do not begin with salicylate of sodium, unless the customary local treatment has proven unsatisfactory. Within a few days such infiltrates, usually begin to disappear even when they have proven rebellious to local treatment for periods of days or weeks. Superficial infiltrates, for instance in keratitis punctata anterior, are not influenced by the agent like those situated in the substance of the cornea.

Phlyctenular keratitis in its various modfications can generally be controlled by local treatment so efficiently that I consider salicylate of sodium uncalled for in most instances. But occasionally especially in older children we meet with lesions so persistent that no change can be seen after weeks' of local treatment. I have observed this particularly in forms resembling a localized episcleritis and in circumscribed patches of deep keratitis especially marginal, without tendency to ulceration. In a majority of instances of this kind the internal use of salicylate of sodium has been followed by prompt recovery, but I have seen too, a small proportion of complete failures.

In the more common form of difuse interstitial keratitis, the syphilitic as well as the non-syphilitic, I have never seen any permanent benefit but sometimes temporary relief. The same want of success was found in keratitis following herpes zoster.

I have used salicylate of sodium too without any apparent influence in various types of corneal ulceration. But it does shorten materially the cyclitis which sometimes persists after the corneal ulcer has been cured by surgical means.

In iritis in which the agent had been highly praised by Chisholm I have been disappointed by it. As a rule its energetic use relieves the symptoms promptly to a moderate extent, at least for a while. But the disease does not end any sooner in typical cases than without it. In the less typical forms of iritis, those with uncertain or indefinite duration, salicylate of sodium is sometimes of very decided influence, but by no means always. In iritis dependent on diabetes it has seemed to shorten the course. In recurrent and chronic forms of either unknown origin or following suppuration of nasal sinuses, I have seen at times unmistakeable benefit. Its greatest utility was observed, however, in iritis secondary to corneal infiltrates, when it cut short the course within a few days.

In so-called serous iritis or more properly serous cyclitis I have found it of no use what-so-ever.

The disease in which salicylate of sodium has proven itself superior to any other therapeutic agent is irido-cyclitis due to traumatism with infection, as well as in sympathetic disease secondary to it. In all the diseases hitherto enumerated a cure could have probably been obtained without salicylate treatment, though after a longer period of time. In the inflammation of wounded eyes, however, the results of salicylate of sodium administration have been so striking in some cases that I believe the eyes could not have been saved without this agent. It is not infallible by any means. There are instances of inflammation in wounded eyes so progressive that salicylate of sodium has apparently no influence at all. Again a milder form of infection may be overcome by the resisting power of the tissues even without any treatment. But many instances do occur in which there seems to the experienced observer but little prospect of saving an eye and in which a decisive, though never very rapid, change for the better follows the use of salicylate of sodium. But I repeat, this is true only of large doses.

Even more positive and convincing than in the case of an eye primarily infected is the effect of salicylate of sodium upon sympathetic inflammation of the second eye excited by an infected injury of the first. I have had the opportunity of watching sympathetic inflammation under salicylate

of sodium treatment from the day of the start to its termination in three patients. All three recovered with perfect sight. The first I have known to remain well at least five years the second nearly three years, while the third died with intact sight nine months later. Even in so small a series of observations in a disease so dangerous to sight invariable recovery is the strongest possible proof of the efficiency of the treatment. The experienced observer could however see the decisive influence of the treatment by watching the progress of the individual case and the tendency to aggravation on omitting the agent for any longer period of time. When the treatment can be enforced from the beginning the inflammation does not maintain long its progressive character and does not resume it if the treatment is continued without any longer interruption. Two of my cases, however, showed that the faithful use of salicylate of sodium during the inflammation of the injured eye does not prevent the outbreak of sympathetic disease in the second. My conclusions regarding the reliability of salacylic treatment of sympathetic inflammation are in accord with those of Gifford in this country and Lindahl of Stockholm.

In acute exudative choroiditis, and in various forms of optic neuritis and neuro retinitis a sufficient trial has shown no influence whatsoever from salicylic treatment.

FURTHER OBSERVATIONS ON THE USE OF THE SOFT-POINT BULLET.

BY HOWARD CBUTCHER, M. D., CHICAGO.

In the Illinois Medical Journal for November, 1904, I presented some results following the use of the soft-nose bullets in deer hunting, comparing them in the effects produced by balls of larger caliber but slower velocity. It is surprising to note the confusion of mind that exists, even amongst persons of fine general intelligence, concerning the practical use of firearms. "Penetration" is often mis-used as an equivalent for "killing power," when in fact the deadliest balls are designed not for penetration but for destruction. The theory of the hard-nose bullet is that it will make a clean, small hole through the body and travel on till its force is spent; on the other hand, the soft-nose ball is meant to spend its whole power within whatever object it strikes. The so-called "shocking power" of a bullet is a mere matter of arithmetic, but the "stopping power" of any gun depends less upon its charge than upon the aim of the marksman. A deer may be shot through the abdomen with a 30-30 ball weighing 170 grains, soft point, traveling at a velocity of 1925 feet per second, and run from one thousand to two thousand yards with its intestines multilated beyond description. Here is an example of a fatal wound but not an immediately disabling one. If the hunter were after bear instead of deer, the practical differences between the two classes of wounds might be brought home to him in a most unpleasant manner. The only wound that can with truth said to be instantly disabling are those that involve the brain or the cord. Very extensive visceral wounds, even fatal ones, are not necessarily of the immediately disabling class. That wounds of the heart will permit of prolonged struggling the following cases will show:

A deer, gross weight 150 pounds (estimated,) was shot with a 160-grain 30-caliber bullet, having a soft nose, with a muzzle velocity of 1925 feet per second. The distance was from 100 to 125 yards. The animal ran either 80 long steps or 109 long steps after being shot (it being impossible to decide which of two shots took effect.) The deer seemed to stagger for an instant, but he certainly did not fall within sight of the hunter, and ran with undiminished speed as long as he remained in view. Fifty yards from where deer was found the fresh snow was bespattered with blood over a wide area. On examination a wound was found involving the 6th, 7th, and 8th ribs of the left side. All these bones were shattered. The base of the heart was torn almost in two. The two auricles and the left ventricle were converted into a common cavity by the

bullet. The chest cavity contained all the blood it would hold. The ball did not emerge from the body of the annimal, but lodged in the deep tissues of the neck. Now, there is something very puzzling in this statement when it is recalled that the deer was not knocked from its feet by the impact of the bullet, which has a muzzle energy of 1316 foot pounds. Theoretically, its whole energy was expended upon the animal, yet he remained on his feet until overwhelmed by hemorrhage. In this case it is probable that a foul if not corroded rifle barrel will explain the contradiction. That this animal should have run 80 yards after receiving such a terrible wound of the heart almost surpasses belief. It may interest students of pathology to note that this deer presented a rounded, well pedunculated growth clinging to the inner side of the thigh, just below the fold of the groin. It weighed three and a quarter ounces and was as pure a type of unmixed fibroma as I have ever seen. It hung by a pedicle not much larger than a lead pencil.

A running deer, gross weight about 110 pounds, received a charge of buckshot No. 5 at a distance of 50 to 60 yards. The animal ran a quarter of a mile and was not found till the next day. The carcass having frozen during the night it was with great difficulty that the examination was made. An experienced trapper who followed the trail said there were undoubted evidences of the deer having lain down several times during the flight. There was a muscular wound of the neck, a like wound of the thigh, and a penetrating wound of the chest. This last made a small, clean-cut hole through ventricles of the heart. The pericardium was distended with blood, but the amount of this fluid free in the chest cavity was small. The lungs seemed to have bled but little. All three buckshot lodged within the carcass of the deer.

As an illustration between mutilation and skill, it may be said that the largest ox may be instantly disabled and brought down like a flash at fifty yards by a shot through the brain with a 22 short smokeless cartridge carrying a ball weighing only 30 grains. I have done this repeatedly. Whether such a charge would penetrate the bones of the spine is highly improbable.

DIAGNOSIS AND TREATMENT OF RUPTURE OF THE UTERUS.*

BY GEORGE SCHMAUCH, M. D., CHICAGO.

We wish to define rupture of the uterus as follows: Tearing of the uterus above the vaginal portion, occurring spontaneously or by violence during labor. We shall also consider in this definition utero-vaginal tears, excluding, however, according to Koblanck, those common cervical tears, which are the consequence of extraction or abnormal uterine activity before the cervix is completely dilated. Perforation of the uterus due to pressure points shall not be mentioned as properly belonging to the ruptures.

Next to sepsis and eclampsia ruptures of the uterus has the greatest mortality during labor. The varying interpretation makes it appear quite natural that statistics regarding its frequency should vary likewise. It is also influenced by the pathological percentage of cases in the various hospitals. The Berlin Frauenklinik shows a frequency of 1:462 in 37,000 labors. Iwanoff of the Moskau maternité reports 1:961 cases in 118,000 labors. The proportion of home-cases is 1:1428. As a general average the proportion will be 1:1500. This coincides with the statistics of Ehlers in Berlin, which are based upon death certificates. He gives in 1895, 48,000 labors with 11 ruptures, in 1896, 50,000 labors with 5 ruptures respectively 1:4000 and 1:10,000. Basing these reports upon a mortality of 60 per cent we do not quite obtain the above named figure, namely 1:1500. It has to be taken into consideration, however, that the practitioner rather states the ensuing peritonitis as cause of death, than the rupture.

Cervix tears occur of course more frequently. The complete perforating ruptures are found about four times as often as the incomplete ones. The mechanism of rupture

*Read before the Illinois State Medical Society, Rock Island.

is but a partially explored territory. Even the post-mortem specimen does not always aid us, to differentiate between primary tear and secondary prolongation. Likewise in practice we often find it difficult to separate spontaneous ruptures from those caused by violence. The force necessary to cause the rupture is reduced to a minimum in a uterus, which is, so to speak, "ready to burst," and may be represented by a careless examination or a sudden change of position.

As to the form of the tear, it makes no difference whether they occur spontaneously or by violence. Indeed, the most severe and irregular tears includnig for instance the bladder, occur spontaneously. Undoubtedly this is caused by the tremendous difference in pressure, a change of highest tension to complete relaxation at the moment rupture occurs. This sudden release produces the same effect as the snapping of a tight cable, followed by the most deleterious results for everything adjacent, for example rupture of the bladder, total exposure of the colon, detachment of the peritoneum up to the spleen.

The mechanism of the typical tears of the lower uterine segment, expansion tears, has no opponents today. It represents the teaching of Bandl, and the results are the so-called Bandle's tears. The symptoms of overdistension, the ascension of the contraction-ring and its oblique course, the tension of the round ligaments even between the pains, form the trio which enables the obstetrician to forestall or diagnose the rupture.

We can speak of overdistention, assuming the uterine walls to be normal, only after rupture of the membranes and complete dilatation and effacement of the os. A maximum tension does not come under consideration as long as the vaginal portion has not become part of the distended lower uterine segment. In case we have unyielding cicatrices of the cervix, the mechanism of the typical tears undergoes deviations. A circular tearing of the portio often follows.

According to Bandl rupture during labor will occur under the following conditions, namely, when the presenting parts meet abnormal resistence, either by its own size, by contraction of the pelvic inlet by obstruction of the pelvis by tumors or by malpositions, such as oblique and transverse presentations. Contracted pelvis is by far the most frequent cause. Weidling and Lehman show that there is one rupture of the uterus to one hundred labors in contracted pelves.

The normal, well-formed uterus, destined by nature to carry and deliver the child, hardly ever tears spontaneously. We find in the literature but a very few cases of spontaneous rupture in primiparæ, and these are not entirely free from objection. Kliehn mentioned five spontaneous ruptures in primiparæ among 347 cases, all above 30 years of age. Schmidt's report from Shauta's Clinic contains no primipara in 28 ruptures. Koblanck cites one rupture in a woman who had borne one child among 22 spontaneous ruptures.

As far as the normal uterus is concerned we can say: no overdistention, no rupture. The picture changes, however, when nature or human hand has created a predisposition. One previous overdistention causes lasting damage, a persisting reduction of the vitality of the muscle cells, furnishing a predisposition to rupture. H. W. Freund has shown that overdistention causes deficient involution, this in turn produces a state of atrophy. In studying the statistics you will find rupture frequent in 7 to 15 paræ. Predisposition as a causative factor in rupture, emphasized by Olshausen, Freund and Fritsch, is now generally recognized. Not every case shows histological changes, nevertheless we must consider it a general rule. Spontaneous rupture of the normal uterus without previous injury must be regarded as an exceedingly rare occurrence.

A previous overdistention of the lower uterine segment during protracted labor is, however, not the only cause of a subsequent rupture. Extensive gynecological surgery, confident of momentary results has created quite a number of predisposing factors. These are: The rupture following fixation of the uterus for correction of malposition, rupture following Cæsarean section, extensive cervical incisions, so-called Duehrssen's incisions (Hofmeier 2, Labhardt 4 cases) amputation of the portio (Velde 4 cases)

adnexial operations with cuneiform excisions (v. Fellenberg), the use of Bossi's dilatator, Tarnier's écraseur perforations of the uterus by probe and dilatator and last but not least, the curettage of the puerperal uterus. Every lesion of the uterine muscles leads to a permanent loss of substance. Repair takes place not by reformation of muscular but connective tissue, as shown by Askanazy in 1892 and lately confirmed by Marchand. This process produces a locus minoris resistentiæ.

The typical rupture of Bandl, affecting the lower uterine segment, takes place in the overdistended uterus, before the presenting part has passed the pelvic brim. Those cases, where rupture occurs after the head has entered the true pelvis or even is visible at the vulva, when the largest part of the child has left the uterine cavity, can be explained in this manner only, that the tear occurred in an old scar or rather represents the final enlargement of a previously existing fissure. The resistance of the pelvic floor furnishes merely the missing link. The participation of the vaginal fornix in spontaneous rupture depends entirely upon the tension of the vault and the tearing force. Utero-vaginal tears are found with comparative frequency in impacted tranverse presentations and pathological anteversions (pendulous abdomen), because here the tension of the vaginal vault is very marked.

Any portion of the uterus, having undergone pathological changes, may tear at any stage of labor. Localization depends entirely upon the place and kind of pathological changes, causing the predisposition. In consequence a rupture of the fundus may occur under these circumstances, although rupture of the fundus occurs as a rule during pregnancy.

We also see ruptures in the third stage of labor. These are always caused by violence and are mostly the results of manual detachment of the placenta. Oswald has collected 9 cases, which were produced chiefly by midwives. However, even the most skillful operator may meet with this accident. We may encounter such firm adhesions between placenta and uterine muscle that separation is possible only with considerable loss of substance. Abnormal insertion of the placenta in a naturally less resistent portion of the uterus, for instance at the tubal openings or over a scar, operative or inflammatory, or abnormal decidua-formation, so called decidual metastases, may lead to rupture. These conditions decrease the normal resistance to such a degree, that the tissues may give way spontaneously or to a mild force during manual detachment of the placenta. Rupture has even occurred with a forced Crede, as the case of Schwendner shows. The peculiar arrangement of the muscle fibres of the pregnant uterus in lamellæ, their imbrication, the connection of the longitudinal by oblique lamellæ, render the occurrence of a tear in a normal corpus almost impossible.

We differentiate between complete and incomplete ruptures; in other words, those with or without opening of the peritoneal cavity. Observations that the peritoneal covering *per se* also may tear, date back as far as 1875. Later observations show that these so-called peritoneal fissures may become external incomplete tears, involving the greatest part of the musculature down to the intact decidua. This variety may terminate fatally by hemorrhage. This again raises the question in which zone of the uterus does the typical tear originate. It was the universal belief that the peritoneum tears last, because it is more elastic than the muscle. This opinion requires some modification. A differentation is essential between those parts of the uterus, where the peritoneum is but slightly attached as the region of the bladder and the parametria and those parts, where the peritoneum is closely adherent to the underlying muscle; in other words, where the muscle fibres insert directly at the peritoneum, as in the posterior and upper portion of the uterus. Individual variations certainly exist. There is no doubt that the muscle tears first in the former variety. Here the tear, if not occurring too suddenly, produces a hæmatoma. It is evident that an incomplete rupture of this variety with formation of a hæmatoma, may be transformed into a complete one by the joint action of

uterine pains and the presence of the accumulated blood. A nice illustration of this is furnished by the cases of Krebs and Goth, where the appearance of a hæmatoma in the region of the bladder led to the erroneous assumption of a distended bladder, when the rupture became manifest by the sudden disappearance of the tumor. However, this process is exceptional. The usual modus is rather such that the hæmatoma when it complicates a complete rupture is of secondary nature, caused by the opening of subperitoneal and parametrical vessels. A spontaneous rupture causing an incomplete tear becomes very rarely complete, for, at the moment rupture has occurred, the principal condition of tearing, namely overdistention disappears.

In the second variety, where the tear has its origin above the internal os, in a portion of the uterus, whose external layers are closely united to their peritoneal covering, the peritoneum must tear first. Here formation of a hæmatoma is impossible. The fact that with distention of a hollow viscus, the outer layers, in this case the serous covering gives way first, rests upon physical foundation. Knauer's four cases of external incomplete rupture substantiate this theory. In three of those the distention of the uterus was still increased by premature detachment of the placenta. The individual muscle fibres behave in these cases like any overdistended muscle. The tear does not take place in the center but at the point of insertion, which is represented here by the peritoneal covering. It appears feasible that timely delivery could prevent the completion of such a tear into the cavity of the uterus.

The etiology of uterine rupture should receive a more detailed consideration, because the conception of the individual symptoms is impossible without it. You will therefore permit me to discuss the value of the classical symptoms of rupture from an etiological standpoint.

The diagnosis of uterine rupture during labor is made, when we find that the above mentioned symptoms of threatening rupture are followed by the symptoms of rupture proper. Bimanual palpation will confirm this diagnosis by the findings. We find the symptoms of threatening rupture only in those cases of spontaneous rupture where a normal uterus has been subjected to labor for an excessively long period of time as in obstructed labor. The ratio between presence of symptoms of imminent rupture and the number of preceding labors is inverse. The larger the number of previous labors, the shorter the period between occurrence of rupture and the onset of labor. The same holds good with ruptures occurring in old cicatrices, no matter what their origin. In multiparæ or women where an anamnestic possibility of pathological changes of the uterine muscle exists, diagnosis must be based upon the symptoms of rupture proper, in the absence of those of overdistention.

The following symptoms pertain to the child as well as to the mother. To the former belong the suddenly occurring mobility, the retraction of the presenting part and the palpability of fœtal parts outside of the uterine cavity. These are by all means the most striking of all symptoms of rupture of the uterus, if labor has been conducted by one person. The forelying part may deviate if great disproportion between it and the pelvic inlet exists and come to lie in the iliac fossa. An improper posture may lead to a deviated vertex presentation. When however the fœtal head has entered the pelvic inlet and has been fixed by a number of pains after rupture of the membranes, a retraction will occur only by elimination of the *vis a tergo;* in other words, the contracting uterus. This is possible only by abnormal distention and relaxation of the uterus, produced by accumulation of blood in its cavity, premature detachment of placenta or by rupture. The natural tonus of the uterus, present also between pains is absent, likewise the intrauterine pressure is altered in both cases.

Premature detachment of the placenta causes an increase of intrauterine pressure and the fœtus becomes movable by the increase of the uterine contents. Rupture of the uterus renders intrauterine pressure negative. In complete rupture mobility of the presenting part is such that it remains in the position, placed by the examining hand, without returning to the pelvic inlet.

This symptom is less pronounced in incomplete ruptures and is seen less often, in impacted transverse presentations than in vertex presentations.

The palpation of parts of the fœtus external to the uterus is a pathognomonic symptom. In woman with thick abdominal walls anæsthesia is often required to elicit it. Palpation of the abdomen of a woman with rupture of the uterus is not always easy on account of the *défense musculaire*. In other cases the small parts of the child are felt alarmingly plain. The presence of the contracted uterus besides the fœtus, facilitates differentiation from a thin walled uterus.

As soon as rupture has occurred and the child has passed into the abdominal cavity, in part or in whole, placental circulation is disturbed so seriously, by the change in intrauterine pressure, that as a rule the child dies. If rupture occurred during operative delivery, the child may live.

The surrounding of the child by intestines changes the percussion note to tympany on top as well as laterally. The detachment of the placenta may lead to a prolapse if the presenting part permits it. Even experienced obstetricians, called in after occurrence of rupture, have been mislead by this detachment of the placenta and diagnosed placenta previa or prolapse of the placenta. With a sufficiently dilated cervix the condition of the presenting part will make the diagnosis possible, not so in rupture of the fundus uteri or in insufficient dilatation of the os. Here diagnosis is either impossible or made too late.

The second cardinal symptom is the hemorrhage. This may be external, sub or intraperitoneal. Only very sudden and violent tears tend to open large vessels. Rupture in old cicatrices or in defects of the muscular substance occurs very gradually. It begins with a small separation, increasing slowly. The opening is filled by the escaping fœtal parts and there is almost no hemorrhage on account of the anemic state of the cicatricial tissue.

A 5 para, moderately flat rachitic pelvis, rupture during two last deliveries, first spontaneous rupture, complete tear of cervix, craniotomy, second induction of premature labor, high forceps delivery with deep incomplete laceration of the cervix, treatment both times drainage of the tear, good recovery, became pregnant again. Upon examination I advised Cæsarean section and told her to report every month; she was instructed to enter the hospital as soon as labor began. As her pains started in absence of her husband, she had to wait until he came home. About an hour after the beginning of the pains she knocked at the door of our confinement hall; she had walked to and from the carriage and did not complain. Regular uterine contractions, but not severe, membranes intact. On account of danger of a rupture, preparations for laparotomy were hastened. This proved justified. Opening the abdominal walls we noticed the anterior wall of the uterus to be torn for a distance of 12 cm. From this tear protruded a very peculiar sight, the white shoulder of the child. There was hardly any blood in the abdominal cavity. By enlarging the opening of the tear, a strong and living child was extracted easily. The sterilizing of the patient was naturally indicated, but she kept her uterus and recovered without complications.

The soft and weakened wall of a uterus of a 12 or 15 para may tear in a similar manner without much hemorrhage. The place of tear also influences the hemorrhage, lateral tears with injury to the uterine artery cause a formidable hemorrhage, while the tears of the posterior wall are usually not followed by much bleeding. In tears with irregular edges, hemorrhage ceases soon, whereas torn vessels exposed by the tear bleed excessively. In such cases fatal hemorrhage may occur often as late as the sixth or seventh day by detachment of the thrombi.

External hemorrhage is the chief symptom of incomplete rupture. We may find it as a continuous stream or a mixture of blood and amniotic fluid may gush out upon lifting the head during examination. The mobility of the presenting part is not so pronounced in these cases. Danger of fatal hemorrhage is relatively larger in incomplete rupture; 61, 5 per cent; 34, 4 per cent (Koblank). Aside from placenta previa and hemorrhage resulting from torn fœtal vessels within the membranes, premature detachment of the placenta will have to be excluded. The objective findings will guard against error in this respect. The darker color of the blood, its intermittent escape during the pain and above all the distended uterus speak for a premature detachment of

the placenta. As this condition occurs much less frequently, rupture should be considered first and excluded.

In complete tears the external hemorrhage may be associated with marked internal hemorrhage. To prove the presence of free blood in the peritoneal cavity by percussion in various positions, will succeed in but few cases. The diagnosis of internal hemorrhage during labor in term is based chiefly on general symptoms. Incomplete tears are often accompanied by subperitoneal hemmorrhage, leading to hæmatoma. This may be mistaken for the bladder as mentioned before. Palpation will reveal a peculiar doughy tumor next to the uterus. As a rule the hæmatoma is formed during labor, but in some few cases it may arise post partum. Late hemorrhage during the puerperium in connection with hæmatoma furnishes certain proof of incomplete rupture not recognized during labor. These hemorrhages may be very sudden, surprising the puerpera when she leaves the bed to void urine, as I have personally observed in one case.

The subperitoneal anteuterine emphysema is, of course, pathogonomonic for rupture. It occurs chiefly in incomplete rupture, but may be present also in complete tears. In case of bladder-involvment, no urine is secreted and catheterization yields but a few drops of bloody urine.

Another classical symptom is the cessation of pains after rupture. This also has to be taken with a grain of salt. The opinion of former times was, that at the moment of rupture, nature stops the pains as a sort of self-defense. At present this view requires modification. All larger tears, especially those of the transverse variety must, as a matter of course, be followed by cessation of pains, as the conditions for regular pains, consisting of a certain intrauterine pressure are not present. Nerve tracts are also interrupted. This does not apply to longitudinal and incomplete tears. The observations are numerous of spontaneous expulsion of the child after rupture. I have reported such a case, where after correction of a face presentation, rupture occurred, which was not diagnosed. The child was born spontaneously, the woman died of peritonitis, and only at the autopsy a complete rupture was discovered. In addition I may remark that regular pains may exist, but are not felt as such by the parturient from lack of intrauterine pressure.

As a third, we have to mention the general symptoms, the signs of internal hemorrhage and the statements of the parturient. At times an intelligent parturient will say that she has felt a piercing pain at the height of a labor pain, that she feels as if something had torn internally. Others state that the child which was already low down has receded. Simultaneously the seat of rupture, excepting those of the posterior wall, which are not accessible to touch, becomes very sensitive to palpation.

More or less pronounced symptoms of collapse are present in every case of rupture. It must be ascribed chiefly to the loss of blood, and secondarily to shock, depending upon how much of the child has escaped into the abdominal cavity. It is wrong, however, to defer the diagnosis of rupture until collapse occurs, because successful treatment will be instituted too late. The pulse changes earliest, without apparent cause it becomes small and frequent. Pallor of the face, coolness of the tip of the nose and extremities, fainting spells, cold perspiration, anxiety, yawning, air hunger, fear of death; in short, the symptoms of a grave acute anæmia, show later. The more sudden these phenomena occurs the more striking they become. A sudden collapse in a parturient previously entirely well, will arouse every obstetrician. It is different, however, when a woman has been in labor for days and her general condition is low, or when rupture occurs during anœsthesia. All ruptures, due to cicatrices and defects, or in old multiparae, take place without any stormy symptoms whatsoever. They have been justly called "latent ruptures" by H. W. Freund. In my own case, cited above, the woman was able to walk to the delivery room without complaint. Kamann reports a case of a 12 para, 37 years old, with a longitudinal tear from the vagina

up to the tube. She was apprised of her condition only when she noticed hemorrhage upon urination. Many more cases of this kind could be enumerated.

The value of each symptom is commensurate to the order of my enumeration. Their presence renders the existence of rupture very probable. Positive proof is obtained only by the objective findings on bimanual palpation. Strict asepsis is necessary, sometimes a light anæsthesia required. The findings are simplest in the uterovaginal tears. The tear is also easily found in cephalic presentations on account of the receding of the head. Obstacles are greater in impacted head and transverse presentations. The examining hand can not pass the forelying part in these cases, hence the diagnosis will have to be based upon the symptom complex. The same applies to rupture of the fundus, with the exception of those cases in which the greater part of the child has left the uterine cavity. In cases of rupture with the presenting part above the inlet, the vagina seems elongated, the lips of the cervix are hanging down relaxed, especially in annular tears. When the vaginal portion is not included in the tear, the os may even collapse.

An absolutely positive diagnosis of complete perforating tear can be made in those cases only, in which a greater part of the child is in the abdominal cavity, or where omentum or intestines prolapses through the tear. In the majority of cases the diagnosis of rupture *per se* must suffice, to be followed by immediate delivery. Examination after delivery will reveal the form of the tear and the involvement of the peritoneum. It is very difficult to find one's way among the masses of blood and torn muscles, to which often membranes of the ovum are still adhering. One is easily deceived by the thin peritoneal layer, and imagines he holds the intestinal loops in his hands, while they are still covered by the elastic peritoneum.

An unexpected hemorrhage during the performance of high forceps, version, or craniotomy makes the event of violent rupture highly probable. During version there are only two ways in which a considerable hemorrhage may be brought on. Either the placenta has been separated in the attempt or we have to deal with a rupture of the uterus. A suddenly appearing mobility of the foetus points with great certainty to laceration. If during a difficult version a sudden hemorrhage occurs and turning becomes suddenly easy, rupture is likely to have happened. As rupture may occur without alarming symptoms and the torn uterus may continue its work, we always have to consider in multiparae rupture of the uterus as the possible cause of post partum hemorrhage. Successful treatment during this stage of labor depends solely upon an early diagnosis. The sooner we find the cause of hemorrhage the more hopeful we can be of the outcome of our treatment. Expression of the placenta by Crede and cessation of the hemorrhage will alleviate the fears of the obstetrician at once. It is different, however, when hemorrhage continues with a well contracted uterus. No other possibility remains than rupture, if retention of a placental cotyledon can be excluded. The diagnosis is to be made by digital exploration of the cervix, with rubber gloves. As this procedure is associated with danger of infection, it should not be undertaken before exclusion of all other causes of hemorrhage. Beyond doubt many incomplete tears are never recognized because they produce a temporary hemorrhage only and heal without reaction. Only subsequent labors may cause graver disturbances. On the other hand, a portion of the cases of sudden death after delivery are undoubtedly due to tears, which pass unrecognized. Almost one-third of all deaths in placenta previa are due to hemorrhage from a cervix tear. According to the statistics of our Berlin hospital, tears of the cervix, after version in placenta previa, are six times as frequent after the most careful extraction than in spontaneous expulsion. In very rare instances disappearance of the ligated cord within the vagina, as reported by Puppel leads to the diagnosis of rupture. More often it is the unsuccessful Crede, which forcing one to manual removal of the placenta in continuous hemorrhage, discloses

the presence of a rupture. Rupture of the fundus will be diagnosed post partum only by digital exploration of the uterus.

In discussion of the treatment of uterine rupture we will casually remark, that a suitable prophylaxis is first and foremost. As to the therapy of existing rupture, Zweifel is undoubtedly right in stating that one-fifth of all cases die of hemorrhage untreated, either on account of wrong diagnosis or unsufficient treatment, due to external circumstances. Danger of fatal hemorrhage and sepsis furnish the indications for treatment.

Before active interference in rupture, the parturient must be delivered in a quick but careful manner. Mutilating operations are here first in order. Craniotomy in head presentations and embryotomy in impacted transverse presentations. Forceps as a rule are of no avail, because the non-engagement of the head, which caused the rupture, does not permit their application. Version is indicated, if a foot can be reached easily and only a smaller portion of the child is within the abdominal cavity. Removal by laparotomy is indicated, when the child is entirely or to a greater extent in the abdominal cavity, likewise in absolutely contracted pelves or tumors obstructing the pelvic canal. External palpation and the size of the uterine cavity inform us how much of the child has escaped into the abdomen. The placenta is usually detached and may be carried a great distance by the peristalsis. In case it does not follow the extracted child we have to find it by using the cord as a guide. Craniotomy on such an extremely movable head is at times very difficult. In the presence of considerable difficulty and with a possible occasion of laparotomy, one should desist from further dangerous attempts. With hemorrhage possibly fatal the nature of the tear becomes second consideration and prevention of exsanguination stands in the foreground. In a hospital with the facilities for immediate laparotomy, that is within 15 or 20 minutes, manual compression of the abdominal aorta, with tying of the thighs and eventually temporary tamponade are usually sufficient to meet momentary danger. In the home we transfer the woman immediately to a table with good illumination. The vaginal portion is exposed by large specula, pulled down by vulsella, and the bleeding branches of the uterine artery clamped when possible by stout forceps. Suture of the wound may follow in uncomplicated tears. A prolonged search is useless. If the bleeding portions are not easily reached, tamponade of the tear should be instituted at once. If the parametrium, the usual source of continuous bleeding, is opened, we must also pack it. Compression of the uterus in anteflexion against the symphysis and the vaginal tampon by means of wads of cotton and bandaging, will prove a valuable adjunct in anterior tears; in posterior tears fixation in retroflexion is employed.

The further treatment depends upon purely external circumstances. If a hospital is within reasonable distance, transfer after packing is to be insisted upon because of secondary hemorrhage. If skilled aid is of ready access, laparotomy in the home is to be preferred in case of excessive hemorrhage, whenever the surroundings permit it. The danger of transportation of a woman with even a well tamponed uterine tear is about equal to a laparotomy, performed under aggravated circumstances in a home. In the absence of any possibilities for transfer to a hospital or operations at home, the physician will have to deliver by natural route and be content with tamponade, even if the child has escaped into the abdominal cavity. Very strange occurrences are reported in the literature, as for instance, where a physician used the cotton of a bedquilt for tamponade and his patient recovered. Quick and appropriate action gives better results under such circumstances than long inactive waiting for assistance. The country practitioner can not be expected to be prepared for laparotomy in every obstetrical case, nor can the knowledge of a perfect technique for such an operation be demanded of him. Tamponade is at present considered equal to laparotomy, if external circumstances do not allow its performance. In less severe hemorrhage or its absence in incomplete tears, the physician in

private practice or country will choose tamponade for obvious reasons. For tamponade aseptic material should be used, sterilized iodoform or silver gauze. It is to be introduced with the speculum if possible. Hæmatomata should be evacuated, the gauze introduced should fill the tear and eventually the parametrium. A tamponade of the uterus is needed only to the extent it aids the packing of the tear. It should remain five or six days or longer and be removed piece by piece. An ice bag placed upon the abdomen relieves the pain. Absolute rest is indicated to the exclusion of even the slightest movement. Peristalsis is arrested by opiates and the bladder is emptied by catheterization. Tympanites is often present and annoying and is combatted by strychnine and atropin. Irrigations are indicated in incomplete tears only. These tears frequently heal without special treatment, when not infected. The first large collection of cases of rupture of the uterus by Kliehn (347 cases) showed that drainage by rubber tube gave better results than simple gauze tamponade. However, tears producing serious hemorrhage can not be treated with simple rubber drains. Here hæmostasis is the first duty. Gauze and rubber tube may be used simultaneously at times. The controversy regarding drainage or operation must at the present time be decided in favor of circumstances governing the action of the physician.

Operations to be mentioned are:

1. Transperitoneal method, with incision paralel to Poupart's ligament, applicable only in incomplete tears.

2. Suture by vagina, only in incomplete and easily accessible tears.

3. Vaginal hysterectomy, used in anterior and posterior tears and in fundus-rupture. It is well indicated in older multiparæ and infected cases, it is easily performed and well stood by the patient. Unfortunately it can be employed in a small number of cases only. Lateral tears and those involving the bladder obscure the field of operation in such a way to such an extent, that this operation has to be discarded in favor of laparotomy.

4. Laparotomy is the classical operation for rupture of the uterus. It is done with less danger of infection than tamponade, and allows better orientation, than any other method, it offers the best results in the hands of a conservative surgeon. If early performed it is the best safeguard against fatal hemorrhage. It is the only method by which the blood accumulated in the abdominal cavity can be removed. Treatment by drainage exposes to danger of decomposition of the bloodclots, although this may not be paramount with sepsis. The sooner laparotomy is performed, the better the results; violent ruptures for this reason give a better result than spontaneous, because they are earlier diagnosed. In a well appointed hospital infection during operation can be avoided nowadays with certainty. The results were different twenty-five or thirty years ago. Karl Schroeder of Berlin, who was about the first to treat rupture of the uterus with the child in the abdominal cavity by laparotomy, had 8 deaths with 8 cases and in consequence instituted treatment by drainage in 1880. He employed rubber T drains, 30 cm. long, which were introduced far up into the abdomen and this enabled him to save a few of his patients. The only contra-indication for laparotomy is a manifest infection, and this only in absence of marked hemorrhage. If the latter is present a laparotomy offers still better chances than tamponade. The presence or absence of infection depends upon the number and experience of the examiners. The infected patient presents a slightly icteric hue, with a pinched expression more marked than that produced by an anæmia. The chief advantage of laparotomy consists in the possibility of complete toilet of the abdominal cavity and the conservative treatment of the ruptured organ. Paintaking hemostasis, the removal of all clots and liquid blood with the patient in a horizontal position, or, if possible, in half erect posture, facilitate the recovery.

Some authors favor supravaginal amputation, others total extirpation on account of its simplicity. Supravaginal amputation preserves the architecture of the pelvic floor and often permits the woman to menstruate.

On the other hand, the sound and non-infected corpus is removed, while the lacerated cervix remains. Hence total extirpation is more serviceable when the vaginal portion is torn and has to be sutured. Even amongst the champions of operative treatment at present there is noticed a more conservative tendency. If possible the uterus should be preserved. In circular tears and those with markedly contused edges, this procedure is of no avail. The advice to remove the uterus in case of infection is not very feasible, as we possess no precise signs of this condition. In general we shall resort to total extirpation more readily the longer the time which has elapsed since rupture, while we will favor conservatism in simple wound conditions and "clean" cases, i. e., not examined. Quite commendable seems the proposition of Zweifel, who in markedly anæmic woman simply sutures the serosa after hæmostasis. This is doubtless the most simple operation and may be combined, if necessary with excision of the tubes and their uterine insertions.

Literature of the last four years shows the report of 12 cases of conservative laparotomy in uterine rupture. They are the cases of Freund, Stroganoff, Leopold, Torngreen, Veit, Kuestner vs. Guerard, Wiener, Kaman.* They were all except two primary laparotomies, one of the latter secondary laparotomies died. To this number we may add 10 cases of Zweifel, with suture of the serosa and 2 deaths. Total number, 22 cases, with 3 deaths, i. e., 13.6 per cent. Hereby it is proven that conservative surgery with proper selection of "clean" cases, gives very good results.

With the question, if a case is "clean" or infected, we have to consider drainage. To decide this question one has to be aware of the fact, that neither laparotomy, tamponade, nor drainage protects against existing infection. If infection is present, extirpation of the uterus is not equivalent to an absolute elimination of the source of infection. It does not protect against "autoinfection," for sufficient wound surfaces remain for the streptococci to invade. Drainage removes superfluous secretion, prevents its accumulation and subsequent intoxication, but does not bar the spreading of pathogenic microorganisms by the lymphatics. Drainage of the peritoneal cavity after laparotomy is in consequence not absolutely necessary. It is indicated only in doubtful cases or incomplete toilet of the abdominal cavity. Otherwise vaginal drainage of the subperitoneal wound surface will suffice. Large hæmatomata must always be drained after removal of the clot. Peritoneal defects are to be covered by adjacent organs, if repair is not otherwise possible. In laparotomy hemostasis is the first principle, then follows the repair proper.

Mortality rate of uterine rupture is still very high, incomplete tears certainly give a better prognosis than complete ones. The conclusions in this paper are based upon the results of the large European University hospitals and especially the Berlin Frauenklinik. You find them collected in Schmit's paper. However, these statistics date back to the year 1880, a time when laparotomy was still a dangerous operation.

There are 246 cases of complete and incomplete rupture:

K. V. Braun, Vienna, 19; recovered, 7.
Koblanck, Berlin, 80; recovered, 21.
Deckner, Konigsberg, 9; recovered, 3.
Tauffer, Budapest, 43; recovered, 17.
H. Ludwig, Vienna (Chrobak), 9; recovered, 4.
Schmít (Schauta), 19; recovered, 10.
To these I have added:
DeLee, 10 cases, 4.
V. Walla, 28; 9.
Zweifel, 29; 16.
Summary, 246 cases; recovered, 91.
That means a mortality of 63 per cent.

This rate, according to Schmit, is reduced to 58.26 per cent, when those cases are omitted, which died without treatment or during operation.

The only modern statistics at present in our hands are those of Schmit, who is an adherent of the tamponade treatment: 19 cases, 1891-1900, with a total result of 47.37 per

*Newmann Doorland, Medicine, 1904, and Winslow, Maryland M. Taur, 1903; secondary operations, recovered, added to proof.

cent dead, or when the cases, which died during operation are deducted, 44 per cent.

Operative mortality, 50 per cent.

Drainage mortality, 38.46 per cent.

A report from Krebs (Toporsky Posen) of 10 cases of complete rupture, principally all operated, 1898-1904, gives a mortality of 50 per cent.

The individual reports, as found in the literature of the last four years comprise only complete tears.

I found 74 cases with a mortality of 32.43 per cent.

58 laparotomies, 17 dead; 30 per cent.

16 tamponades, 7 dead; 43.7 per cent.

The question of conservative surgery in rupture of the uterus has so far only been discussed from the point of view of saving time and avoiding infection. Literature of the last few years reveals a number of cases in which the previously ruptured organ, or the uterus subjected to Cæsarean section has suffered from a new laceration during a following labor. There are 29 cases of rupture, following Cæsarean section to be found in the literature at hand. They are: Kruckenberg, 21 (most of these were not sewed properly); Olshausen, 2 (1 before Saenger's method of suture was used and 1 afterwards out of a number of 180 cases treated this way), Everke, Wagner, Munro Kear, Eckstein, Targett, Meyer 1.

Spontaneous and traumatic rupture occurring before labor had set in are not included. No reference is made to those cases in which imminent rupture of the uterus furnished the indication for the second operation. I find reported 34 cases of rupture of a previously torn uterus. Couvelaire, 9 ruptures in 17 cases of labor at term after previous rupture, i. e., 53 per cent Peham, 4; Labhard, 2; Kriwsky, Peters, Alberts, Dittel, Wenzel, 1 each.

These reports prove distinctly that Cæsarean section, as well as tearing in some cases, totally destroy the fitness of the uterus for subsequent labor, and in most cases diminish it considerably. Whether the improper method of sewing or a deficient union of the wound, surfaces is the cause of tearing after Cæsarean section is difficult to decide. Some reports of repeated Cæsarean section show that the serous covering only was united, whereas in others no sign of the old incision was to be found at all.

However, it would be premature to conclude that the uterus, after rupture or Cæsarean section is absolutely unfit for labor. We are not justified by these reports in declaring total extirpation of the uterus as the only proper procedure. There are a number of reports made, which show that a prematurely induced labor and even labor at term were brought to favorable termination for mother and child.

The possibility of a subsequent labor will always depend upon the extension and place of the tear. Especially lacerations of the lower uterine segment incline more than others to rupture. A scar at this site is as shown by H. W. Freund drawn inside of the cavity of the lower uterine segment, and, therefore, prevents in some way the normal formation and extension of the lower uterine segment and might keep the head from descending, as observed by Stroganoff; since the cicatricial tissue lacks the normal fixation which the rest of the uterus enjoys.

The same consideration leads to the conception, that vaginal Cæsarean section, when performed by one incision, is liable to interfere with the function of the lower uterine segment in succeeding labor. At present there are no confirmations of this apprehension.

Furthermore, we will have to conclude, that the classical Cæsarean section for relative indication, a relatively frequent operation now a days, owing to our confidence in asepsis, will have to be more restricted in future, in favor of the more conservative lateral section (pubiotomy), which leaves the bearing organ intact.

Whoever, after rupture of the uterus, intends to save his patient from the possibility of pregnancy and its subsequent perils, should content himself with resection of the tubes and adjacent uterine tissue. Even most complicated tears will heal by conservative

treatment as proved by many reports. The decisive factor will always be the presence of infection.

In case a woman becomes pregnant after previous rupture, premature labor, labor at term, and Cæsarean section will have to be considered. The condition of the individual case, the form, place and mobility of the cicatrix, the desire of the woman to have more children will decide our procedure. Abortion is very rarely indicated. When there is any endangering distension present, we will resolve upon Cæarean section. Premature labor commonly gives good results in labor after rupture, but we should guard against a too hasty use of over-large Colpeurynters, since they might produce a new laceration. In general we may say that we will be compelled to draw upon our entire store of obstetrical knowledge and art in these cases, make the labor as easy as possible for the woman, and deliver her instrumentally as soon as there is a possibility of a harmless delivery, be it by forceps or extraction of the child.

SOME EYE PROBLEMS THE GENERAL PRACTITIONER IS CALLED UPON TO SOLVE.

BY RICHARD J. TIVNEN, M. D., CHICAGO. ILL.
Assistant Surgeon Illinois Charitable Eye and Ear Infirmary.

Ophthalmology of all branches of medicine has received the almost unanimous consent of the medical profession to exist as a distinct specialty. This well-recognized separation may often distract the general practitioner from exhibiting a keen interest in the study of ocular phenomena, and may prejudice also his desire to bestow the same relative consideration on ocular findings as he readily grants clinical manifestations of other organs of the body. For two reasons, at least, this practice is not to be commended. First, because the general practitioner is called to diagnose the eye disease—in the vast majority of cases, before the oculist is consulted; second, because in passing lightly over the evidence obtainable from the eye, clinical data of distinct value may be underestimated or entirely ignored.

A brief reference to some ocular manifestations occurring in nephritis, diabetes, locomotor ataxia, syphilis, and rheumatism will demonstrate the importance of attention to eye findings.

It is my intention merely to direct attention to the frequency of ocular involvement in these diseases, in order to emphasize their diagnostic and prognostic value in connection with the disease itself.

Nephritis—Many ocular changes occur in Nephritis, but involvment of the Retina, in particular, presents evidence at once reliable and conclusive.

Norris estimates that fully 25 per cent of the cases of Brights' disease have a Retinitis. When it is present, the element of prognosis is greatly simplified. Few cases survive longer than two years after it is discovered and the majority die within a year. Belt records 419 cases, of which 72 per cent died within one year and 90 per cent within two.

Diabetes—In Diabetes, Iritis is found in 5 to 6 per cent of cases; Retinitis in 20 to 30 per cent; Cataract in 4 to 25 per cent. When Diabetic Retinitis develops, the prognosis is exceedingly grave.

Loco-Motor Ataxia—In Loco-Motor Ataxia, atrophy of the optic nerve occurs in about 20 per cent of cases. It may ante-date the appearance of ataxia, the lightening pains, loss of knee jerk, and other spinal symptoms from 2 to 20 years.

Disorders of ocular muscles is present in 20 to 38 per cent of cases; Argyll-Robertson pupil in 76 per cent.

Syphilis—Alexander from a study of the statistics of eight German ophthalmological clinics estimated that 2.16 per cent of diseases of the eye are the result of Syphilis. Thirty to sixty per cent of the cases of Iritis are due to Syphilis and 59.4 per cent of ocular muscle paralyses.

In congenital syphilis, interstitial or parenchymatons keratitis occurs in 50 per cent of cases.

Rheumatism—Rheumatism is the etiolog-

ical factor in the majority of Iritis cases not caused by Syphilis.

This brief reference is sufficient to demonstrate the startling frequency of ocular involvement in general disease, and the distinct value of such evidence from a diagnostic and prognostic standpoint. Loring's estimate of the value of the Ophthalmoscope in this connection bears repeating: "In the whole history of medicine," he writes, "there is no more beautiful episode than the invention of the ophthalmoscope and physiology has few greater triumphs. With it, it is like walking into nature's laboratory and 'seeing the infinite in action.' While oftentimes, through its agency also, we get the first intimation of disease in remote and seemingly unconnected organs, so as to read, as if in a book, the written troubles of the brain, the heart, the spleen, the kidney, and the spine."

Foreign Bodies in the Cornea—The management of foreign bodies in the cornea, while apparently a simple matter, is one of the most fruitful sources of serious disease of the eye.

The chief danger arising from such an injury is infection. This may come from the foreign body itself or be introduced during its removal.

The production of an ulcer with its grave consequences entailing either opacities of the cornea or perforation is the usual result of such an infection. Strict antiseptic measures are indicated in removing foreign bodies. In order that the least amount of Corneal tissue be disturbed, only the smallest pointed instrument is used. This is wiped with a pledget of cotton saturated with alcohol, or better still dipped for a moment in a solution of carbolic acid and wiped thoroughly dry before using. After removal of the body, the cornea is gently irrigated with 1:5000 corrosive sublimate solution. It is an excellent practice to apply a bandage for twenty-four hours.

Differential Diagnosis; Iritis, Conjunctivitis, Scleritis—Because Iritis, Conjunctivitis, and Scleritis all cause redness of the white of the eye, they are sometimes confused in Diagnosis.

In Iritis, there is no discharge; in Conjunctivitis, the eyelids are gummed together in the morning. In Iritis, there is circum-corneal injection giving rise to a pink or pale violet zone around the cornea. The appearance of the Iris, however, is the decisive test.

The Iris, in Iritis, loses its normal lustre, its circular outline, and the pupil is contracted. If a drop of Cocaine be instilled, the pupil dilates irregularly, due to the adhesion of the posterior surface of iris to anterior capsule of lens.

In Scleritis, the characteristic appearance of the purple, rather than red spot close to margin of cornea, and exclusion of the symptoms common to Iritis and Conjunctivitis, will easily distinguish this disease.

Glaucoma—Cases of Glaucoma are not uncommonly treated for sick headache, neuralgia, erysipelas, influenza, and toothache. Associated with Glaucoma is usually found rapid failure of vision; a shallow anterior chamber; dull cornea; semi-dilated pupil, and most important of all, increased tension of the eyeball.

In all cases of suspected Neuralgia, the tension should always be carefully taken. It is the one symptom of Glaucoma which establishes beyond question its diagnosis.

Cocaine—The chief use of cocaine in eye practice is as a local anæsthetic in operations and for diagnostic purposes to demonstrate the presence of adhesion in Iritis. Its use is not entirely without danger. Absorption through the puncta may occur, producing toxic symptoms. A transient amblyopia has been reported and Glaucoma has been produced. Dryness of the cornea sometimes occurs from its use in operations and a variety of catarrhal conjunctivitis has been described. In instilling Cocaine to avoid absorption through the puncta and entrance to the nasal cavity, either the lower lid should be everted or the puncta closed by pressure of finger.

Atropine—Atropine is one of the most, if not *the* most important therapeutic agent of the ophthalmologist. Improperly used, it may produce blindness; judiciously em-

ployed, its visual triumphs are legion. It is indicated in correcting errors of refraction; spasm of accommodation; treating convergent strabismus: diagnosing and breaking up adhesions in Iritis; ulcers of the cornea; and inflammatory conditions; Iritis; Cyclitis; Chorioditis; Retinitis; Scleritis, and circular Iridodialysis.

It is contra-indicated during lactation and pregnancy; in Glaucoma, in subjects over 40, or cases showing tendency to increase of tension, and in ulcers of the cornea with impending perforations. As with Cocaine, toxic symptoms may result from absorption through the puncta, and the same precaution in instilling should be observed, viz.: either everting lower lid, or closing the puncta by pressure with the finger.

Glaucoma, or tendency to increased tension, should be absolutely excluded before atropine is used. A safe rule is—always try the tension before instilling. Many exhibit intolerance to the drug, and, therefore, weak solution should be preferred.

Treatment Advised for Cross-Eyed Children—What treatment is to be advised for cross-eyed children? Perhaps no question presses the family physician for solution more frequently than this. It might truthfully also be said, that no question has in the past, and to a less extent even the present, been surrounded by a greater haze of prejudice, darker clouds of empiricism and cobwebs of fear and dread. Fanciful tales of the dire consequences following the use of that alleged popular sight-destroyer, "Belladonna"; exaggerated myths of the sad results following operations to straighten cross-eyes; staunch, but sadly misdirected reliance in nature to aid the victim to "out-grow" the affliction and strong popular prejudice against the use of glasses, have been and are individually and collectively responsible for the loss of sight in an amazing number of cases. The poor eyesight of these unfortunates, imposes a distinct restriction of opportunities for successful careers. Likewise, the uncharitable comment and critical notice their affliction subjects them, is undoubtedly the cause of many heartaches, sorrows and failures in life.

The family physician and the oculist are today, in accord, on the proposition that the time to treat a squint is when it is discovered, and that the earlier the case comes under treatment, the more hopeful the prognosis.

There are two chief reasons for treating a squint early: First and most important, to preserve and improve the vision in the squinting eye; second, for cosmetic reasons. The treatment resolves itself into non-surgical and surgical. The province of my paper permits merely an outline of the usual procedures. The non-surgical are: First, the correction of refractive errors; second, training of fusion sense, by occlusion bandage, atropine, use of stereoscope, amblyoscope, and other visual exercises. The surgical measures comprise advancements, tenotomies, single or combined.

Errors of refraction underlie the majority of squint cases in children and the proper fitting of glasses, which are not only usually well tolerated, but enjoyed by children as young as two and one-half years give surprising results and often render resort to surgical measures unnecessary.

TO RECAPITULATE.

1st. *Ocular Findings* are of distinct diagnostic and prognostic value in systemic diseases. The ocular manifestations observed in Nephritis, Diabetes, Loco-Motor Ataxia, Syphilis, and Rheumatism, amply warrant this conclusion.

2nd. *Foreign Bodies* in the cornea are frequently the source of serious disease of the eye. Infection may be introduced, and ulcer, with its grave consequences, develop. Antiseptic measures, in their removal, are to be strictly observed.

3rd. Iritis, Conjunctivitis, and Scleritis may be confused in Diagnosis. Care in distinguishing the distinct clinical manifestations of each will prevent the error.

4th. *Glaucoma* may be diagnosed as sick headache, persistent Neuralgia, Erysipelas, Influenza, or Toothache. In all such cases

the tension of the eye-ball is the correct guide.

5th. The use of Cocaine and Atropine is not free from danger. Toxic symptoms may be produced. Disastrous results to vision from the use of atropine may be produced if the contraindications are not observed.

6th. Squint in children should be treated early. The usual order of treatment followed is: First, correction of refractive errors; second, training of fusion sense; third, surgical measures.

Errors of refraction underlie the majority of cases and proper fitting of glasses may be all that is required.

100 State Street.

TREATMENT OF ACTINOMYCOSIS AND BLASTOMYCOSIS WITH COPPER SALTS*.

BY ARTHUR DEAN BEVAN, M. D.

I want to make a very brief preliminary report on the subject of the treatment of the cases of actinomycosis and incidentally blastomycosis with copper salts. I do this at this time because on account of the rather limited number of cases of actinomycosis and blastomycosis that comes to one man, I believe that collective statistics of a trial of this method of treatment will do more to give us early definite and positive knowledge of its value than can be obtained by limiting it simply to the treatment of the few cases that come to my service.

Last year we had a half a dozen cases of actinomycosis in my service, and since that time, at the Presbyterian Hospital, there have been a number of others, both in my service and in the service of Dr. Billings and other attending men. We have found, as others have, in connection with the treatment of actinomycosis that the iodide salts had very definite and very positive effects and we have been quite successful in curing circumscribed lesions, especially about the mouth and the tongue and the neck, with iodide of potash combined with the X-Ray, using the iodide as has been emphasized by Dr. Ochsner in an intermittent way, that is, giving the iodide of potash for a period, then discontinuing it, and then giving it again. We have noted this fact, that although marked impressions were made by the iodide salts on all cases of actinomycosis, that nevertheless the cases of abdominal actinomycosis and of lung actinomycosis were fatal in a large percentage of instances. Probably seventy per cent of cases of abdominal actinomycosis are fatal, and probably ninety per cent of long actinomycosis are fatal in spite of the iodide treatment.

I want to say a word or two with reference to some of the cases which I reported last year. One abdominal case which I reported as greatly improved under the iodide, has since died with a very definite brain lesion. I have no doubt, although we were unable to obtain a post-mortem, that it was a ray fungus lesion of the brain. One of our lung cases, on the other hand, has made apparently a surprising recovery, and I want to make a statement in regard to that case. The patient whom I showed last year, and at that time we found ray fungi in the sputum, was treated for a long time with iodide, using as high as 100 grains a day, with distinct improvement. Later a lesion of the testicle developed, which was opened, and found to be a chronic abscess, but no ray fungi were found by the operator, who opened this accumulation of pus, although it is fair to presume that it was a ray fungus lesion. The iodide was discontinued in May. The man was poor and very anxious to support his family by returning to his work. After returning to his work, which brought him out in the fresh air most of the time, he improved steadily. A few days ago, when I saw him, we found no active evidence whatever of the process. In actinomycosis, as in tuberculosis and in many other lesions, a most important factor in overcoming the disease is undoubtedly the increased resisting power of the individual, and I thing that factor should be considered in all of these cases. In spite of our iodide treatment, which has been so successful in local lesions, we have not been able to save most of our

*Before the Chicago Medical Society, October 25th 1905.

lung cases and our abdominal cases of actinomycosis. Because of that fact we have been looking out for some other method of treatment.

It is a well known fact that the ray fungus occurs normally as a rust on grain. Within the last few years there has been a good deal of work done by scientific agriculturalists with the use of copper in destroying parasites of vegetables. You are all familiar I have no doubt, with a number of articles that have appeared in scientific Journals and the lay press, showing the great destructive effect of copper in minute solutions in reservoirs of water, destroying the algae and low forms of vegetable life. The ordinary rusts on grain can be readily destroyed by minute solutions of copper sulphate. The sulphate seems to be the most powerful of the copper salts. It is a very destructive agent to vegetable parasites and is well born by animal organisms. My attention was called to these facts and inasmuch as the ray fungus occurs in nature as a rust on grain, I thought it might be worth while to experiment with copper as a treatment of ray fungus in the human being. We have done this now in several cases

I have one patient here tonight whom I desire to show. The history of this case is briefly this: It is a case of abdominal actinomycosis and as most of these cases are probably secondary to a ray fungus lesion, either of the appendix or of the cecum. The patient developed an enormous lesion which filled the entire pelvis. He was operated upon, and an abscess cavity opened, fistulae were found extending in all directions. The patient was placed upon large doses of iodide of potash, and in spite of this treatment suppuration continued to develop. About six weeks ago I placed him upon copper sulphate, using the sulphate of copper internaly and as an irrigation. We began with one-quarter of a grain of copper sulphate, three times a day, then increased it to half a grain, and we have given some of our patients as high as one grain, three times a day. The irrigation is made with a one per cent solution of copper sulphate.

The French chemists (especially in connection with the subject of the possibility of chronic poisoning from the use of copper as a dye in canned vegetables, peas, etc, etc.) have done much work to determine the toxicity of copper used internally for a considerable period, and have shown that copper sulphate can be used in doses of from two to eight grains a day, for six months at a time, without any deleterious effect to the individual. This was an important point to determine before making an extended trial of the salts. Copper occurs as a normal constituent in small amounts in the higher animal form, in some low animal forms as the oyster it occurs in large amounts. Copper is readily absorbed by the stomach and intestines.

The so-called brass poisoning, which has been extensively discussed, is not due to the copper apparently, but to some other elements which enter into the brass. In this same connection I might state that we have used copper salts in two cases of blastomycosis. It is now a well-established fact, (a suggection which I made at the time of the report of the first case of blastomycosis in the West by Dr. Hyde, Dr. Hektoen and myself) that the idodide salts are curative in blastomycosis. The iodide of potash has a very powerful effect, used internally, on cases of blastomycosis. Many of these cases have been cured with iodide alone. For the superficial cases, the ordinary treatment of blastomycosis today is the combined use of the iodide and the X-Ray. Possibly, as has been shown by some experiments conducted by Professor Haines and myself, the X-Ray may produce a more powerful effect, or rather the iodide may produce a more powerful effect in combination with the X-Ray, because, as we have shown, free iodine is given off as a result of the action of the X-Ray on iodide solutions. It has been found, however, that some of these cases resist the X-Ray and the iodide treatment, and this is especially so with cases of general blastomycosis. I have been informed by Dr. Oliver Ormsby, who has seen so many of these cases of general blastomycosis that they have all been fatal in spite of the iodide

treatment. Therefore, we cannot consider the iodide as a successful means of treating general blastomycosis, no matter how successful it has been in the cutaneous cases combined with the X-Ray. Inasmuch as copper salts seem to have such an effect upon actinomycosis, I thought we might use it in blastomycosis, and we have employed it in several cases.

EXHIBITION OF CASES.

I want to show the effect of the copper salts in one case of quite extensive blastomycosis. This man came from a Western city, with extensive blastomycosis involving the entire dorsum of both hands, and we have been treating him with the copper salts. We have used the copper internally in one-quarter grain doses, three times a day, and later in half grain doses, three times a day, and are using the copper sulphate as a wash in one per cent solution. This right hand has almost entirely cleared up. It was a very serious, extensive lesion at first. The other hand is not quite as clean. There is still a lesion at one point which is suppurating, but there has been no extension, and very marked improvement under the copper treatment.

The next patient is the man whom we have treated with copper for actinomycosis of the abdomen. At the time the iodide was used we employed the X-Ray, and you will see a distinct coloring from the use of the X-Ray on the skin of the abdomen. There was a large mass filling almost the entire pelvis. We had repeated demonstrations of the pathology. The ray fungus could be found in the pus at almost any time. There was extensive infiltration of the recti muscles by the process; fistulae were developing at all times, and now this process has almost entirely cleared up under the copper treatment. The patient has gained twenty pounds in weight since the first of September (six weeks) under this treatment.

Now, I do not want to create an erroneous impression in regard to this treatment. We are simply experimenting with it, and I submit it to you with these results. I present the treatment as one that seems to have a logical basis and seems to have produced marked curative effects. As I have stated, I think a collective experimentation on our cases of actinomycosis and blastomycosis should be undertaken in order to determine the value of copper as a cure for these conditions.

SEPTIC INFECTIONS ABOUT THE RECTUM.*

BY CHARLES J. DRUECK, M. D. CHICAGO.

In presenting this subject to you tonight, it is my desire to set clearly in your minds the clinical pathology and the principles of treatment of these collections when involving different pelvic structures, and to suggest, not only what should be attempted, but also what should not be done. The subject includes every collection of pus from a furuncle at the anal margin to the serious, diffuse, pelvic phlegmon, which involves not only the rectum, but any and perhaps all other pelvic and even abdominal organs. The exact origin of the infection in every instance cannot be demonstrated nor can it always be referred to the rectum. The treatment likewise varies so much that each form must be considered separately.

The rectum is surrounded with loose areolar tissue which is abundantly supplied with blood vessels and lymphatics, and which is easily and frequently infected or inflamed by extension from the rectum and anus, or by obstruction of the circulation. There is a continual variation of blood pressure in these tissues depending upon the condition of the bladder and rectum, whether full or empty, and even on the position of the abdominal organs. These alterations have a marked effect on the development of infection. The rectum is at all times the habitat of hords of infections microorganisms, and the process of osmosis from the rectum certainly absorbs their toxins and doubtless at times the germs themselves pass through the rectal

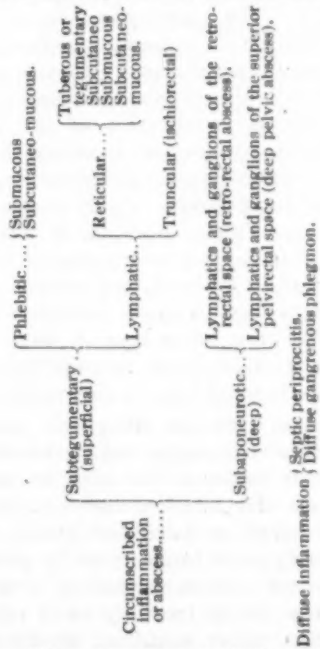
*Read before Southern District Medical Society, June 15, 1905.

wall by way of the lymphatics. The inflammatory reaction caused by these infections may be diffuse or circumscribed and usually go on to abscess formation.

Perirectal abscess may be due to any one or more of several microorganisms, the most common of which is the tubercle bacillus. Koch says that tubercle bacilli are never found in the rectum, except when tubercular ulceration of the bowel exists, but Von Jaksch has demonstrated their presence in the stools of patients who did not have tuberculosis of the bowel. Simmons (quoted by Tuttle) has shown that the gastric juice, while it prevents the growth and development of tubercle bacilli, does not kill them and that when they pass into the alkaline intestinal juice they are still vital, showing that the bacilli may pass through the intestinal canal and effect the lower bowel or rectum without having gained a foot hold in the intestine proper. Perianal and perirectal tubercular abscesses are frequently found as the first evidence of infection when the patient does not show either then or later any pulmonary disease. To be sure, the infected discharges enter the alimentary canal very easily from tuberculosis of the nose, throat or respiratory tract. It is also possible that patients may be infected by rectal tips, bougies and instruments that have been used by tubercular subjects.

The bacillus coli is the next germ in point of frequency found in perirectal infections and seems to have an amoeboid power as soon as any injury to the epithelial layer of the mucous membrane permits it to escape from the intestine. Vaughn has carried out some interesting studies as to why this migration of the colon bacillus is not always followed by abscess formation. He states that each bacillus contains a capsule which contains the toxic principle and that this capsule is not dissolved or destroyed by the alkaline fluids of the intestine, but is broken by gastric juice, thus setting free the toxins. He further considers it possible that the blood serum also has this property. When the bacillus enters an area with engorged capillaries, the capsule is ruptured and the toxins set free. Colon bacilli are occasionally found in pure culture in these abscesses, but are more frequently associated with staphylococci, streptococci or tubercle bacilli.

Naturally there must be a solution of continuity somewhere in the mucous membrane of the rectum or on the skin about the anus, admitting the infection to the deeper cellular tissues. The point of entrance, together with the nature and depths of the wound determine somewhat the location of the abscess, but the condition of the local lymphatic and capillary circulation and the variety of the invading microorganism is the chief factor. The classification of perianal and perirectal abscess by Quenu and Hartman is the most concise and complete and is as follows:



The diffuse forms of infection may develop as extensions from the superficial. Subaponeurotic abscesses are above the levator animuscle.

There are three distinct systems of lymphatics about the rectum and anus and a study of these will give us some idea as to the direction the infection is likely to travel. Those lymphatics in the skin about the anus

called the middle hemorrhoidal lymphatics travel along the perineum toward the inguinal glands or else back behind the sacrum. The deeper lymphatics pass through the ischiorectal space to the hypogastric ganglia and are called the superior hemorrhoidal system. It connects with vessels supplying a gluteal tissues through the ischiatic notch and obturator foramen. Those lymphatics around the deep rectum pass to the sacral and vertebral lymphatics.

Infectious toxins gathered up by any of these system may be followed along the chain. When the glands retain the poison and become inflamed, passage is blocked along that particular chain, but as the networks anastomose freely, not only with other branches of the same systems, but also with deeper systems, the infection may thus be carried along other channels. In this manner two or more distinct abscesses may develop. This intimate relationship of the various lymphatics explains the occasional development of abscesses quite a distance from the rectum, but following a very simple local operation. Tuttle, speaking of this, calls attention to the fact that injuries of the anal canal may be followed by abscess of the ischio rectal fossa or in the cutaneous tissues of the buttock, while injuries deep in the rectum are likely to be followed by abscess in the retro rectal space or deep in the thigh.

Marginal Abscess—Marginal abscesses arise at the anal margin and involve only the superficial tissues of the skin or mucous membrane. The infection may occur through a hair follicle or Liberkuhn gland, resulting simply in a furuncle, or by abrasions from coarse clothes, scratching, horse-back or bicycle riding, irritating toilet paper or discharges, either menstrual or diarrhœal. These infections may vary in size from a little acne point to a pocket as large as a hazel nut. The lymphatics may carry the infection from this simple focus to other tissues and a larger area be involved, but the toxin is always carried in the superficial channels and never invades the ischiorectal fossa or other deep tissues. This is a true follicular abscess and the symptoms correspond with those of follicular abscess anywhere; a tingling, burning pain is followed by a swelling, which finally ruptures, when pus and sometimes necrotic tissue (core) escapes. Rarely such an abscess is deep-seated. The symptoms then are more severe and the whole picture resembles a carbuncle. Such a termination fortunately is unusual. These furuncles may be single or multiple and at times come in almost continuous crops until they make life a torment. Usually they do not invade the rectum and, therefore, do not interfere with defecation, but the patient cannot sit or walk and must take to his bed. Eczema, erythema and herpes all may be etiologic factors in these abscesses. Thrombotic hemorrhoids and other blood clots being near the surface, put the skin or mucous membrane on considerable tension and rupture the basis of glands and follicles, thus opening the skin. Also, any pyogenic organisms circulating in the blood are likely to be deposited on this broken vessel and clot. There is usually some temperature, but no systemic complications. Although this region is so richly supplied with lymphatics, both superficial and deep, the walls of the follicle prevent invasion of the deeper tissues and the abscess ruptures upon the surface of the skin or mucous membrane and heals without fistula, although in weak or tuberculous subjects a sinus sometimes occurs.

Treatment—The treatment of the marginal abscess differs radically from that of deeper forms in that, incision and drainage is frequently followed by untoward complications. In a few instances where the patient has learned by experience the course these infections run, he may apply early for treatment, and if he is seen before suppuration has actually developed, the colon should be thoroughly flushed out, the bowel constipated with opium, and he be kept in bed on a restricted absorable diet, and with ice bags at the anus. The area of local inflammation for three or four inches around should be painted with pure Ichthyol two or three times daily. Succeeding applications should be put on without washing off what

is left of the Ichthyol. Very good results have been claimed by injecting 95 per cent carbolic acid or a strong salicylic acid solution directly into the follicle, if the case is seen early. Where there is a tendency to recurrent crops, Hartman (Tuttle) recommends a 10 per cent salicylic acid in glycerin to be applied by the patient whenever he notices any pain or soreness. The importance of local cleanliness must be impressed upon the patient, and after each defecation the parts should be bathed with a mild antiseptic solution. The only time these purely skin abscess should be incised is when a collection of pus may be evacuated by a simple puncture with a bistoury and the cavity filled with Ichthyol. Deeper and wider incision is prone to open the subcutaneous tissue to infection where nature has walled them off. The X-Ray seems to promise a great deal for those cases of continually recurring crops of furuncles, but what I have seen is as yet so recent that it does not justify an enthusiastic report. However at a future meeting I expect to report my results.

Subtegumentary or Perineal Abscess—Abscess beneath the perineal skin or beneath the mucous membrane of the rectum are common complications of lesions of these parts. They are practically always secondary to some other disturbances and result from infection of the lymphatics, although the abrasion of the skin or mucous membrane cannot always be found. The infection in being carried off results in either a breaking down of a gland or thrombosis of the lymph canal and thus circumscribes the abscess. These abscesses occur most frequently in hearty, robust men, seldom in women or old people and almost never in children, except the tubercular abscesses which occur very frequently in little ones four to six years old. Cutaneous hemorrhoids (the remnants of former thrombi) are always liable to recurrent inflammation and infection. The injection of hemorrhoids with carbolic acid is quite frequently followed by this form of abscess. Quenu considers these abscesses, a lymphangitis, the result of infection carried by these vessels from the rectum. The inflammation is diffuse and lies beneath the skin and constitutes a subcutaneo-mucous abscess, or if within the rectum a submucous abscess.

Symptoms—The symptoms of this form of abscess vary. It may develop without any systemic involvment, no chill and very little fever or pain. The abscess opens early and exudes a thin watery pus. Examination shows a small ulcerated opening on the skin or through the mucous membrane into the rectum. The tissues are undermined with a soft, boggy mass all around the opening and sometimes this burrowing is quite extensive, particularly up between the rectal coats where it frequently forms fistulous openings into the rectum. Considerable burrowing may occur before any opening occurs. With all this breaking down beneath the surface there is usually very little inflammatory reaction in the skin. In other instances there is marked systemic reaction, a sharp chill with rapid pulse, fever and general malaise. The local symptoms develop less suddenly with a feeling of fullness and indistinct soreness which gradually localizes and becomes sharply painful. Examination shows all the signs of infection, a tumor to one side of the rectum, which is hot, red or violet in color, tender and throbbing. Cases with such an onset showing such severe systemic invasion are nearly always due to septic microorganisms and frequently a mixture of the streptococci and colon bacilli. The tubercle bacilli develop cold abscesses. The location of the abscess somewhat determines the severity of the pain. Abscesses situated near the anus where there is considerable loose areolar tissue which is easily distended are much less painful than those situated higher up where the various structures are firmly bound by the muscles and fasciæ. The sphincter is also usually excited and its spasm increases the pain. When the abscess develops above the sphincter it may point into the lumen of the rectum and present no external appearance. Digital examination, however, will demonstrate a globular mass indurated or fluctuating according to the extent of the development.

The natural course of these abscesses is to rupture spontaneously. If it ruptures upon the skin, the result is a blind external fistula; if within the rectal or anal canal, a blind internal fistula, or if both upon the skin and into the rectum, a complete fistula results. Very frequently in low-seated abscesses the internal opening will be found just within the anus. The distinguishing feature about these abscesses is that they do not drain and heal like abscesses elsewhere, but continue to remain as sinuses. No satisfactory explanation of this has ever been offered, but the fact remains. When the abscess develops between the layers of the rectal wall it is called intramural. Its constitutional symptoms are slight, usually a sense of heaviness in the rectum, painful defecation and sometimes retention of urine. All these symptoms occur with inflamed, internal hemorrhoids and without a careful examination an erroneous diagnosis may be made. Digital examination shows local tenderness, swelling and perhaps fluctuation. Bimanual palpation with one finger in the rectum and counter pressure on the perineum will be of much value in early diagnosis.

Treatment—Just as I impressed upon you the importance of therapeutic measures in the marginal abscess, so now I wish to emphasize the fact that the deep abscess, except where malignant disease or syphilis complicate, does not respond to anything except surgical treatment. Therapeutics are a waste of valuable time. Local anæsthesia may be used in many of the early cases and by first touching a spot on the skin with pure carbolic acid on a probe or by firmly pinching the skin between two fingers for a few minutes, sensation is destroyed enough to introduce the hypodermic needle to infiltrate with cocaine solution. The incision should be free and radiate from the anus across the full length of the abscess. Diverticuli in the acute abscesses will usually drain well through the main cavity and need no lateral incisions. All septi between the diverticuli and the main cavity must however be thoroughly broken down, making one large wound. The object of this is to obtain free drainage. If the cavity is large, it is well to fasten the drainage tube in place for a few days and after that to use a gauze drain. The cavity should be thoroughly flushed out once or twice a day with normal salt or a mild antiseptic solution. In the intramural variety and in any instance where the incision has been carried through the sphincter, it is necessary to dilate the anal canal or at least the anus sufficient to open and cleanse the whole wound. The intramural abscess being between the mucosa and the musculature of the rectum must be opened from within the anus. Dissection through the external wound up alongside the rectum is not followed with good results. The important part is to carry the incision wide enough to leave no possibility of a pocket at the lower end of the wound, a condition similar to what occurs when the abscess opens spontaneously. Rest in bed is essential to rapid recovery, and, while most of these cases get well, if properly treated after the operation, even if allowed to be about, yet they get along quicker and more satisfactorily if kept recumbent.

Ischio-Rectal Abscess—All perirectal abscesses are called ischiorectal by some physicians, but Etchepare (Tuttle) has found that less than eighteen per cent are situated in the ischiorectal fossæ. These abscesses develop outside of the rectum and beneath the skin and fasciae. They may be single or multiple, and when more than one, they may connect, usually behind the rectum through the space between the levator ani and the external sphincters. Even when they develop on one side of the rectum and open either spontaneously or have existed several days, a second abscess frequently develops on the opposite side. The fossæ in which these abscesses develop are filled with fat, and as the pus fills the acini, the fat is displaced, but the connective tissue reticulum remains and the abscess is honeycombed in form. It is essential in operating to break down these pockets, as otherwise the contained pus will burrow and infect new areas. There seems to be no limit to the extent to which these abscesses will travel. Frequently an abscess

occuring on one side will burrow to the opposite, usually behind the rectum, and form a horseshoe or dumbbell-shaped cavity, which gives the abscess its name. Infection may, however be carried up through the fossæ on both sides and two abscesses develop from one source. This process usually goes on faster on one side than the other and one abscess my appear several days before the other. Such abscesses may not communicate with each other.

Etiology—Perirectal abscesses always result from infection which is due to one or more of the following causes, namely: injuries by foreign bodies, either through the rectal wall or through the tissues of the buttock; ulceration or perforation of the rectum fissure or wounds at the anus, and very frequently minor operations as for hemorrhoids. Fistula or stricture are followed by abscesses, also squeezing superficial furuncles probably by forcing pus out into the surrounding tissues and sometimes kicks or bruises may be the cause. Where an abscess has existed for several days prior to evacuation, a certain amount of adenitis necessarily develops in the surrounding lymph glands and these glands may subsequently give rise to another abscess. Microorganisms in these glands may remain virulent indefinitely. I will quote a case that was referred to me by Dr. Watts, which shows this condition. About 1894, Mrs. A. suffered with an abscess and resulting fistula, was operated upon and cured as far as she knew, and remained well for ten years, until June, 1904. At that time she developed a second abscess in the same ischial fossa. The abscess had existed several days when I operated upon it June 30, 1904, and removed about a pint of very foul pus and necrotic tissue. The case was treated along lines laid down later in this article and she made an uneventual recovery, the wound completely closed. In March, 1905, she developed a third abscess in this same location and about the same amount of pus and debris removed. I examined her on May 15, 1905, and found everything apparently sound. No tenderness anywhere (except, of course, on the new cicatrix). No tenderness on either vaginal or rectal examination. This woman has never been pregnant. The uterus is small, but in good position and movable and no evidence of any pelvic inflammation. The bowels have always been regular and the sphincters are normal in tone. No history of tuberculosis or syphilis. I believe this is a case of lymphadenitis, although none of the glands are palpable, and in making my prognosis, I told this woman that I feared that she might have a recurrence of the trouble.

Symptoms—As a rule, ischio-rectal abscesses develop acutely with some constitutional reaction, which in some instances is very serious. Locally, there is a vague feeling of soreness within the rectum which increases gradually to a dull ache and later a throbbing pain. Externally, there may be no signs at all if the infection is deeply seated, but if near the surface the signs of abscess will be seen; such as, red or violet discoloration and swelling. A finger introduced into the rectum and pressed out and down will usually appreciate a circumscribed mass of induration or fluctuation. Defecation is extremely painful and dysuria may occur. In aggravated cases the swelling, tension, œdema and redness about the anus appear erysipelatous and a microscopical examination of the blood and excretions is necessary to differentiate such an abscess from true erysipelas. Sometimes the inflammatory reaction, not only surrounds the anus, but involves the scrotum, perineum and thighs, but such is an extreme case. When these abscesses are opened the pus is thick and creamy, unless there has been extravasation of blood, when it may be brownish, and a clot may be expelled enmasse or as debris. Shreds of necrotic tissue are frequently seen in the pus and indicate a septicæmic character of the infection. The odor is foul and gangrenous, even though the abscess does not communicate with the rectum. The gush of gas when the abscess is opened is due to the pent up condition and does not come from within the rectum. These gases are the result of bacterial life within the abscess. When the abscess is opened, either spontaneously or by the knife, the constitu-

tional symptoms immediately subside and often within twenty-four hours will have disappeared, but unless drainage is complete, another abscess will form and the whole chain of symptoms recur. This quite occasionally occurs if all the compartments are not broken down during the operation.

In regard to the differential diagnosis, it must be remembered that hemorrhage into the connective tissue resulting in a hematoma may produce all of the symptoms of abscess. Of course, unless infection occurs there will be little rise of temperature, and no systemic reaction.

Treatment—Free incision at the earliest moment is the only treatment for these cases. Local applications have been discarded by all surgeons as useless, because, while they give temporary relief and may retard the progress somewhat, yet they never abort or prevent suppuration. We must never wait for fluctuation but drain freely whenever we find well defined induration, unless we think it is syphilitic. The wound should be wide enough to expose the whole field, thus permitting the operator to see what he is doing and allow free and easy drainage. Unless the surface wound is larger than the widest part of the abscess, pockets will form and the pus begin burrowing. After the abscess is opened, the finger should be introduced, and all partitions and bands broken, thus opening all pockets. Curretage is not advised because the steel spoon affords no knowledge of the condition of the walls, while the educated finger distinguishes necrotic from the normal connective tissue. The currette may go beyond and carry infection into healthy parts. The cavity should now be thoroughly irrigated with 1:2000 bichloride, and if there is considerable oozing or bleeding the cavity may be firmly packed for 12 to 24 hours. At the end of that time, the packing, if used, should be removed and a large rubber drainage tube introduced and retained. It is of the utmost importance that the walls of the cavity be kept apart and free drainage allowed. When both ischio-rectal fossæ are involved the surgeon's ingenuity is often taxed because the posterior connecting tract must be drained. To incise both cavities and also the posterior, connecting sinus would produce an infundibular anus. Hartmann opens the posterior cavity widely and inserts a drain into each lateral pocket. In a case of my own, I made a somewhat curved incision exposing the whole posterior connecting tract and put a large drainage tube into either side. Although wide undermining and dissection is made of the loose, connecnective tissue there is little danger of incontinence resulting. The more common complication is that the resulting scars become so depressed about the anus that fecal matter is frequently lodged and it is difficult to keep the parts clean. Many of these abscesses rupture spontaneously into the rectum and form internal, blind fistula. Even where the abscess has been opened surgically, it is found clinically that a portion of them rupture into the rectum subsequently, but it is not good surgery to make an opening into the bowel because of the dangers of incontinence and the prolonged convalesence which such action entails. Doubtless many of the ruptures into the rectum subsequent to operation upon the abscess are due to some oversight in breaking down all the trabeculæ. Every operation for abscess must include a thorough dilitation of the sphincters to prevent any subsequent spasm of the sphincter and rectal wall. The dilitation also permits the free egress of gas and thereby adds much to the comfort of the patient. It also prevents any collection of feces in the rectal pouch, which might cause undue pressure on the thin wall. Of course, the dilitation should be done after the abscess has been evacuated, because, if previously performed, it would increase the danger of breaking the already thinned wall. Then again, the pressure and traumatism might squeeze pus out into new areas or dislodge thrombi and thus produce septicemia in remote parts. The dressings, other than the packing in the wound above mentioned, consists of a large, loose perineal and anal dressing. I never use tubes or anything else within the rectum.

Retro-Rectal Abscess—These abscesses de-

velop in the cellular tissues between the rectum and sacrum and above the levator ani and may result from necrosis of any of the large bones of the pelvis or from perforation of the rectum by a foreign body (bougie or syringe tip) or more frequently, following posterior proctotomy for stricture when there has been imperfect drainage. It may also occasionally occur as an extension through the lymphatics from old fistula tracts, the breaking down of tubercular nodules or gumatta or ulceration within the rectum. Appendicular abscesses have been found here, but such a course is very rare. Retrorectal infection frequently follows ischiorectal abscess and after resection of the rectum.

Symptoms—The symptoms are at first vague and indistinct; there are no rigors, a dull back or sacral ache and heaviness in the pelvis and sciatic pain may be the only symptoms. There may or may not be painful defecation. Usually there are signs of pus formation, i. e., temperature, malaise and a sallow complexion. External palpation about the anus and perineum is negative, digital examination within the rectum, however, demonstrates a circumscribed induration back of the rectum or later as pus forms and tension increases, the mass becomes painful, fluctuates and obstructs evacuations. Retention of urine may also occur. The abscess may break into the rectum or it may burrow through the levator ani, either separating or rupturing its fibers, and opens into the ischiorectal fossa and finally out into the skin. A retrorectal abscess in bursting through the rectum may burrow considerable distance between the coats of the bowel and appear as an intramural abscess. (Quenu and Hartmann, p. 146).

Treatment—A large, crescent-shaped incision between the anus and coccyx affords the most thorough drainage. Where the walls of the abscess are well defined and covered with necrotic tissue it may be well to currette, but it is always accompanied with danger as spoken of before. After thoroughly flushing out the cavity a large drainage tube should be introduced and sutured to the skin and the sphincter dilated the same as in ischiorectal abscess. Packing the wound prevents drainage and should be avoided after the first dressing when, however, it may be necessary on account of hemorrhage. Tonics, good food and plenty of fresh air are the prime requirements, as these patients all need building up. The patient should be kept in his bed or on his feet during the whole convalesence and not allowed to sit down, as that position compresses the edges of the wound and prevents drainage.

Superior Pelvirectal Abscess—These abscesses arise generally from disturbances of the genito-urinary or pelvic organs or even abdominal organs. The levator ani muscle forms a physiological roof of the lower pelvis and abscesses originating below this muscle empty, either into the rectum or upon the skin, and, while they may cause severe local and even some general systemic disturbance, they are only rarely fatal. Above the levator ani is the peritoneal cavity, and infection here furnishes a different story. Large quantities of pus may collect and burrow into the bladder, vagina, high up in the rectum, the sigmoid or out of the pelvis into the groin, but very rarely does it burrow through the perineum. With the enormus development of such a pus cavity enough pressure is exerted upon the bowel or urinary tract to produce mechanical obstruction. Such an abscess may be due to any of the causes of ischiorectal abscess, appendicitis, necrosis of the bones of the pelvis or spine, prostatitis, or ovarian disease.

Diffuse Septic Periptroctitis—This is a form of rectal infection that belongs to the preaseptic era and which is never found today except where gross carelessness has occurred or following an injury that has been neglected. The local findings are acute inflammation about the anus and in the ischiorectal and retrorectal spaces and is very virulent. It may appear a few hours after the injury or not for several days and may extend to other tissues until it entirely surrounds the rectum and may even extend to the peritoneum.

Symptoms—The onset is insidious and the signs of systemic invasion come on slowly.

Pain is felt in and about the rectum and gradually increases until it becomes intense and is accompanied by a feeling of fullness and weight about the sacrum and coccyx. If the attack follow upon an open wound or an operation, the discharges change to a mixture of blood and pus and are very foetid, and the whole area is acutely inflammed, edematous and swollen. The patient is rapidly exhausted and often a sharp diarrhœa sets in. Difficulty of urination or even retention may occur. Vomiting is common and there may be complete loss of appetite. Septic foci may develop in other organs, such as heart or pericardium and precipitate the end. The whole picture resembles that of puerperal fever, and if allowed to run its course, death results usually within two weeks.

Treatment—The treatment is one of prevention. Diffuse periproctitis should never occur in operative wounds and the precaution lies in asepsis with free drainage when operating. Proctotomy for stricture and resection of the rectum are the operations most likely to cause trouble. If in the course of treatment the disease should occur, its remedy lies in bold free incision of the inflamed tissues to allow easy drainage and frequent irrigation with sterile water or saline solution. Hot boric dressings are also to be used when possible; in other words, such attention as will assist the circulation and prevent gangrene.

In resume then, you will see that it is very important to determine exactly which structures are involved in the infection before we decide as to the treatment. While certain cases respond quickly to very mild therapeutic measures, others will require heroic and ingenious surgery. Everything considered, the surgeon with the broadest conception of the case and the greatest resourcefulness will attain the best results. I leave the subject in the hope that I have demonstrated the different life histories of these pus collections and that this paper may have cleared up a perhaps doubtful point in your mind.

ACUTE URINARY RETENTION—ITS TREATMENT, MEDICAL AND SURGICAL.*

BY VICTOR D. LESPINASSE, M. D.

Instructor Genito Urinary Surgery Northwestern University Medical School, Member American Urological Association, and Chicago Urological Society.

In discussing this subject this evening I will eliminate all the rare causes of urinary obstruction, as urethral valves, tumors, stones, pedunculated bladder growths, vesical calculus, marked phimosis and imperforate urethra and consider only the most common causes of urinary retention: namely urethral stricture, prostatic hypertrophy, post operative retention and traumatic rupture of the urethra.

Always the first step in a consideration of treatment is the prophylaxis of the condition under discussion. If our stricture patients would lead model lives from a moral and physical standpoint and see their physician about once a month for the gentle introduction of a large double taper steel sound, the cases of acute urinary retention from stricture would be almost eliminated from our records. But in the nature of things this is not possible as the class of individuals who have these troubles is largely composed of men who will tolerate no restraint and indulge themselves until they absolutely have to stop, but nevertheless we should advise one and all of them to observe regular habits, avoid liquor in any and all its forms, avoid cold and exposure and excesses of all sorts and to select a competent physician and go to him once a month or once in two months and have a sound passed. Thus assuring urethral health. The prophylaxis of prostatic disease is not so easily and quickly disposed of, as this is a disease that attacks all manner of men, irrespective of their previous manner of living and former urinary diseases, hence no particular line of conduct can avoid it as far as we know now, but after its inception for his own best interest our patient's whole life

*Read before Southwest Section Chicago Medical Society October 3, 1905.

must rotate with the prostate as its pivot. All the rules applicable to stricture cases must be observed by him, with this addition, it being possible to permanently relieve him by a radical operation, hence do not temporize too long with minor surgical procedures before telling him of the advantages and dangers of major surgery. In the post operative cases the first and best method of prophylaxis is to secure a first-class physician; he will keep patients away from surgery as much as possible, but where they need the services of a surgeon, will select one for them who has technical skill of a high degree and operates rapidly, cleanly, neatly, and by previous thought and preparedness, avoids all delays, waiting for various materials, dull instrustruments, etc. This class of work is followed by little shock, slight post operative discomfort and urinary retention is rarely seen. The Traumatic cases are all caused by accidents, hence a practical prophylaxis here is impossible; avoid walking fences, climbing trees, falling through hay holes, runaways, etc.

Post Operative Retention—Now we have before us a young man who was operated upon for acute appendicitis, or more frequently hæmorrhoids, and since the operation, now twenty-four hours, he has been unable to urinate. Of course, the first thing to do, unless in our opinion the operation performed will not permit it, is to sit him upright in bed or even to place him in a hot sitz bath; if this fails, try the aid of gentle hypogastric pressure, patient at the same time trying to urinate, next turn on the water in the room and arrange so it splashes and makes considerable noise,or if there is no running water handy pour some from a pitcher into a basin or place a basin at the bedside tell the patient to hold his hand over it and then pour a small stream on his hands, or follow the same method, replacing the hand by the glans penis; all these failing, insert the index finger in the rectum and manipulate the prostatic urethra; do not massage the prostate as you do for therapeutic effect, but simply vibrate your finger over the prostatic urethra, starting up as high as you can reach and coming down to the prostatic apex. While doing this have a little stream of water playing on the glans penis. If all this fails our patient must be catheterized, and in doing this use a soft rubber catheter about 18 F size, surgical cleanliness and the utmost gentleness.

Stricture Retention—The acute retention of stricture is usually not relieved as easily and symply as the post operative variety. Let us digress for a moment and consider a few points in pathology germain to the subject under discussion. What are the conditions which actually cause the urinary stoppage?

There are three, namely: Irritation, congestion and spasm, and are grouped, being called by various names, as plus conditions, determinative conditions. Their pathogenesis is simple and as follows: We have a strictured urethra, the hard submucous infiltrate projects into the urethral lumen because of its lessened elasticity, hence the urinary stream strikes it so traumatizing it more than the normal wall, causing congestion. If the urine is particularly irritating as after a spree, the ingestion of spices or anesthesia it will cause a still greater congestion and irritation with its concomitant swelling at the strictured point and the swelling causing further projection into the urethral lumen causes greater trauma and greater trauma greater pain; greater pain more spasm, and more spasm obstruction, and thus the sum total of this cycle; irritation congestion, swelling, pain, and spasm is complete obstruction; retention. All attempts at urination only increase the traumatism to the stricture and hence close the lumen tighter; all rough and unskillful attempts at relief accomplishes the same result only in a higher degree. To treat this patient now may be very simple or it may require all the skill possible in surgical art. First get him into a hot bath 105-110 F., and take the edge of his pain by a hypo of Gr. ⅛ or ¼ morphine, remembering that in these conditions the kidneys are suffering from back pressure and elimination is slow, so be careful in repeating it. Next follow out all the maneuvers outlined under operative reten-

tion up to and including a gentle catheterization with at least an 18 F. soft rubber catheter preceded by an injection of olive oil. These failing, inject the urethra with a ½-1 per cent cocaine sol., with 1:1000 adrenalin in it, or by using a urethral syringe, or by means of the urethrocope and an applicator, apply a few drops of the adrenalin right on the face of the stricture or probably better the adrenalin ointment. After waiting a few moments for the medication to act, try to catheterize with a soft rubber catheter gently and slowly, do not persist too long or traumatize much. Failing, fill the urethra with sterile olive oil and pass from three to six filiforms, perferably ones with a screw tip, so they can be attached to a sound or catheter; now by alternately advancing and with drawing them first, one till it is obstructed, then another, till finally all the pockets and folds are filled, and the next one will find and engage the stricture; now if your filiform has a screw tip, screw on your catheter and slowly insert it into the bladder. If it has no screw tip, pass a tunnelled sound over it into the bladder; in doing this always have the filiform moving out as the sound is inserted; if this is neglected, you may nip off a piece of the filiform and have to remove it with the operating cystoscope. If the stricture is so small and hard that it is impossible to pass the tunelled sound over the filiform, just leave the filiform in place. The pressure of the instrument causes an absorption of a portion of the obstruction and soon the urine will trickle out slowly alongside the instrument. If you have difficulty in passing the filiform, fill the urethra with oil, compress it at the glans and then slowly pass the finger tip toward the scrotum, maintaining the compression all the time; when you have distended the urethra considerably, stop, maintain your finger in place, and now manipulate the filiforms; by this maneuver you distend the urethra and this tends to pull the stricture open somewhat and obliterates a great many, if not all, of the folds and pockets. Another method of inserting the filiform is by means of the urethroscope, which is passed down to the face of the stricture, its orifice located, and the filiform passed with the eye as a guide. This is an excellent method and is of great value in a complicated case. Another manipulation is with a urethral speculum, the ends of whose blades separate widely, while their bases do not; insert the instrument into the canal to the stricture and then separate the blades gently, looking in all the time; this will tend to separate the edges of the stricture enlarging it; then, under the eye, pass the filiform through into the bladder. In all urethral instrumentation dealing with stricture aim to keep the tip of your instruments on the urethral roof; this is the most fixed portion of the canal, has fewer folds and rugæ, and usually the stricture is formed by infiltrates in the floor, and its orifice is closer to the roof than to the floor. All these methods failing, we have two others at our command, namely: Supra pubic Puncture and external urethrotomy.

Supra Public Puncture—This is a much-neglected procedure; properly used and performed it is a very valuable one.

The only instrument necessary is an aspirating needle or preferably a trocar. After careful examination by all means in our power we determine that this particular abdominal tumor is a distended bladder by the following symptoms and signs: Tumor rises out of the pelvis in the median line, fluctuates, pressure on it, gives sensation of a desire to urinate, is dull of percussion and does not change with position. The technique is simply surgical cleanliness for patient, operator and instruments as for any clean surgical procedure.

By a quick thrust in the median line and a short distance above the symphysis you enter the bladder; withdraw the obturator and urine flows; do not drain the bladder rapidly, but take from ¼ to 1 hour to do it. This frequently breaks the vicious cycle of trauma swelling, spasm and obstruction by removing the trauma of efforts at urination, and so the swelling and spasms disappear and our patient can urinate freely or up to the absolute size of his stricture. External Urethrotomy is to be performed to relieve urinary reten-

tion when all other means fail. Its technique without a guide is difficult and should only be done by a competent surgeon, as short anesthesia, rapid operation and proper armamentarium is here a sine qua non for success, and on them depend the failure or success of the individual case.

Prostatic Cases—In the urinary retention, due to hypertrophy of the prostate there is no stricture present in the sense of narrowing of the urethra. The condition causing the obstruction is a distortion of the urethra by the growths in the prostate. Hence a large instrument is much more likely to pass than a small one, and filiforms have a very small place in prostatic obstruction. When confronted with a case of acute retention, due to prostatic obstruction, every procedure, as mentioned under post operative retention, should be tried up and including catheterization with a soft rubber instrument. All these failing, use some or all of the following special prostatic instruments and techniques:

Mercier Coude Bicoude.

Long Curve Catheters.

Flat Catheter Laterally.

All these failing, supra public puncture is in order to tide over this particular congestive spell, or if the obstruction continues, a drainage of some sort, either perineal or supra pubic, to be followed later by a prostatectomy.

Traumatic Retention—Here intro urethral manipulations should be very gentle, very clean and even then very brief; do not persist in attempts at catheterizing, but incise your patient's perineum down to the urethera at least; there is no particular necessity of getting into the bladder as in an organic stricture case; just let the blood urine and debris drain and patient will urinate freely in a short time, as the pressure on the urethra will be relieved.

THE X-RAYS IN MEDICINE AND SURGERY.

So much has been said as to the use of the Rays, so many able and scientific expositions and demonstrations have been given, that it seems hardly proper for a tyro in this line of work to take up your time with anything on the subject. However, we thought it possible to say something that may be suggestive and beneficial on a subject, whose scope and remarkable efficiency is but just beginning to be appreciated by the profession at large.

How far the discovery and introduction of the Rays and kindred therapeutic measures have opened up new avenues of knowledge and developed means of combating and aids in the solution of the hitherto medical and surgical riddles, it is now not possible to say. We believe that their use and efficiency are just beginning to obtain and that constant and steady progress will continue to be made in the range, technique and details of their use.

Today the Rays are developed by means of the static and coil machines, and the question as to the better producer is still sub judice. In the general practicians office, for several reasons, it is not always possible to have and to maintain both static and coil. While the coil machine is always in working order and very largely free from any atmospheric effect, yet for ordinary and the general run of therapeutic and diagnostic uses a static machine with from 10 to 15 revolving and an equal number of stationary plates, will develop Rays sufficiently rich and penetrating for satisfactory work. The rays so developed seem more tractable and less liable to cause untoward results, especially in the hands of the less experienced worker than those from the coil. Whichever means are used one must make careful and tentative use of the Rays in every case, regulating their richness, distance and length of application, and never lose sight of the variant susceptibility and idiosyncrasy of the individual person and his tissues to the effects of the rays. Today there is less excuse and occasion for burns and untoward results, since, by the use of lead foil masks, of shields for the tubes, and protective screens for the patients, unfortunate results are less and less frequently obtained. It is also well to bear in mind that the rays

have a cumulative action, as it were, and hence that their use and dosage calls for constant thought and attention. Bad results may not obtain or be in evidence until months after the radiation is used. Through the experience of others and that self-acquired the dermatites, burns, ulcerations, sloughs, loss of the nails of fingers, and even of fingers and hands, and the development of malignancy of X-Ray lesions are fast becoming things of past experience. However, it is well to have in mind their possible appearance and that at the most unexpected times, and frankly to state to patients such a possibility before beginning treatments.

Now as to the tissues which are most susceptible to the stimulation and histologic and pathologic alterations of the Rays? More than all else do we find them acting upon the tissues and structures arising from the epiblast—the integument, hair, nails, and also upon the cellular elements of all tissues reached by the Rays. The epidermis is influenced in quite a remarkable way. There is an increase in all its layers, particularly the mucous, increase in the amount of pigment and keratohyaline and karyokynetic processes, thus showing a stimulation of cell division and production. While there results a thickening of the epidermis there is also a process of atrophy of the hair follicles, of the glandular elements of the skin, and of all the differentiated parts thereof, while the less differentiated parts are stimulated and vitalized. In the development of its action on the skin there is then the capillary dilatation, the diapedesis of the red cells, the bronzing, and the collection of round cells in the corium, particularly about the hair follicles. Because of the selective action on the hair follicles the Rays are of great utility in the treatment of the sycoses and various tineas.

We do not know that the Rays are germicidal, save in so far as they seem to cause an increased karyokynetic action of the bacteria, such stimulation causing them to multiply from a virulent to a less virulent condition, and the process continues until they reach the extremest X-potency of innocuity. No offense is intended to our brothers of the high potencies. With this action phagocytosis continues and the cellular and other structures of the tissues are stimulated and developed, and thus find themselves better able to cope with and overcome the invaders.

The great benefit and frequent cures of lupus by radiation has been attested and reported by many operators, and it was along this line that the first and greatest successes were attained, thereby inciting the investigation in other directions and lines and presaging the good results that have followed. In my own practice was a case of lupus vulgaris of the nose and alæ, extending from the nasal bones, involving the entire organ and extending down onto the cheeks. This was of long standing, about nine years, but after 23 treatments given at intervals of three or four days, the lesion was covered over by the intact, whitish, characteristic lupus cicatrix. Another case was very much benefited after seven treatments, the patient removing from the city the treatments were then discontinued. The opinion of the best observers and workers is that lupus vulgaris is very amenable to the curative effects of the Rays, and that the results are equal even to those obtained by means of the Finsen lamp. In the treatment of rodent ulcer many cures have resulted, and the radiation therapy promises the best of any treatment. In the epitheliomata of cutaneous origin and location, especially when situated on the face, other than on the lips, the results have been excellent. We have seen complete cure of such with no recurrence and with but slight cicatrices. When the epithelial growth has invaded the deeper structures with metastases here and there, the Rays should be used only after resort to the knife is had. After the removal of carcinomatous tumors great benefit frequently follows their use as a prophylatic treatment. The anodyne effects of the Rays should be made larger use of. In inoperable cases of malignancy, where there is much pain, requiring the almost constant use of opiates, great relief will

follow radiation, and morphine may be withdrawn nearly altogether. In overcoming the offensive discharges of such lesions the Rays will be found efficacious, thus relieving the pain and obviating the necessity for frequent dressings—always disagreeable and unpleasant duties.

The dermatologist has benefited by the use of the Rays in the treatment of various chronic eczemas; in acnes which have resisted the routine treatment excellent results are frequently secured. The atrophic effect of the rays is made use of in cases of obstinate local hyperidrosis, and where there is undue activity of both the sebaceous and sweat glands. The parasitic sycoses and tineas are peculiarly successfully treated. In the various pigmented and vascular nævi much good has been done, and the future is bright with promise for their successful treatment. The X-Rays are not a panacea for all the cutaneous ills and disfigurements of the human form divine, and yet they have been used for almost every morbid manifestation of local origin and neurosis, with oftentimes good results.

Tuberculosis of the joints, tubercular arthritis, has yielded to the use of the Rays. In the enlarged glands, due to the tubercle infection, many report complete cures and subsidence of all objective signs and symptoms. The tentative use of radiation in Hodgkin's disease and leucocythæmia has not been so frequently tried and the results therein are variable.

We believe that there are many affections where deep penetration and stimulation of the cellular and intracellular structures can be produced with good results. By its use unhealthful, sluggish granulating surfaces can be converted into a vigorous healthful appearance, and tubercular and patent sinuses may be by this means filled in and closed. Favorable reports are given of its use in varicose ulcers. In a case now under observation and treatment the Rays have stimulated the production of healthful granulation tissue, causing the necrotic and poorly nourished tissues to be separated and thrown off. We trust that a permanent cure will result and that the ulcer may be filled in and closed over by tissue of sufficient vitality to resist the mechanical effects of the venous stasis.

Among the various instruments of precision and diagnostic aid the use of the Rays ranks among the first. For the location of calculi in the ureters, gall bladder and bladder, there is no aid to take their place. By their use aneurisms, intra-thoracic growths, mediastinal abscesses and tumors are brought into view. Cavity formation in the lungs, and the various ptoses of the contents of the abdominal cavity are thus clearly delineated.

In the art and practice of denistry the Rays are of use in orthodontia; disclosing the position and shape of un-erupted teeth, and in the failure to erupt the full number the presence or absence of the teeth from the alveoli can be demonstrated; the root or roots or impacted molar teeth may be correctly outlined, thus enabling the operator to extract with greater precision and few broken teeth. The extent of alveolar abscesses, the condition about the roots of teeth crowned or about to be, is made plain; they also disclose the existence of and location of supernumerary teeth. In short the uses of the rays in operative and prosthetic dentistry are of incalculable value and dentists should make larger use of them than they do at present.

There is no need to emphasize the diagnostic use of the Rays in surgery. We all know that their application has changed the diagnosis of an injury as a sprain into the certainty of a fracture; disclosing fractures where none were suspected, defining the presence and existence of bone tumors and their origin, locating the presence of foreign bodies, differentiating a tumor of pregnancy—when ossification has advanced sufficiently—from and eliminating it in the diagnosis of other tumors and neoplasms of the uterus and adnexa; delineating the conditions and destructive processes of Pott's disease and tubercular coxitis, and throwing a flood of light upon many conditions that were formerly seen as through as glass darkly.

Experiments on animals show that the Rays cause a degeneration and absorption of

the lymphatic glands and the graafian follicles in the female, and that they are a cause of sterility in man. Reports of the sterilizing effects of the Rays on operators are becoming numerous. Whether the effects are lasting, we presume, that the census of physicians' families will hereafter disclose. Let us hope not, and that society will not take to using the rays as another means of aiding and abetting race suicide.

The working out and unfolding of the romance of the Rays is an intensely interesting pursuit, and, while the results in many directions are, and no doubt will continue as elusive and delusive as the ignis fatuus, yet there has resulted and will continue to result many positive, known and demonstrable results.

None can prophesy the ultimate perfection of the light therapy, nor set limits to its usefulness, nor calculate the impetus that has thus been given therapeusis by means other than drugs.

Marriages and Deaths.

MARRIAGES.

J. H. Aleshire, M. D., to Mrs. Addie Miller, both of Plainville, Ill., at Palmyra, October 31.

Fred Baumgart, M. D., Danville, Ill., to Miss Anna Hoehn, of Columbus, Neb., October 26.

Rexwald Brown, M. D., Chicago, to Miss Elizabeth Murphy of Hortonsville, Wis., October 21.

Paul Burrell, M. D., Winslow, Ill., to Miss Minnie Van Dervort, of Warren, Ill., at Galena, Ill., October 17.

Thos. Charles Buxton, M. D., Decatur, Ill., to Miss Anna Strope, of Orena, Ill., November 4.

Moses Eisenstaedt, M. D., to Miss Blanche Janet Benjamin, both of Chicago, November 1.

Frank H. Edwards, M. D., to Mrs. Clara Caton Sirrine, both of Evanston, Ill., in Waukegan, Ill., October 28.

Clarence Maxfield Frye, M. D., Rock Falls, Ill., to Miss Birdie Ferris, of Sterling, Ill., November 7.

Peter J. Gillen, M. D., Prairie du Rocher, Ill., to Miss Mae E. Burch, of Fort Gage, Ill., at Cairo, Ill., October 17.

Francis Welsh, M. D., Hospital, Ill., to Miss Lena Ackerman, of Yorkville, Ill., recently.

E. Stanton Hymer, M. D., to Miss Helen Richardson, both of Chicago, June 20.

C. Bernard Voigt, M. D., Mattoon, Ill., to Miss Pearl Warner, of Shelbyville, Ill., at Chicago, November 6.

DEATHS.

Rufus H. Bartlett, M. D., died at his home in Chicago, November 21, from typhoid fever, aged 50.

James G. Boardman, M. D., died at his home in Bradford, Ill., from pneumonia, October 29, after a short illness, aged 65.

Dennis Collins, M. D., died at his home in Chicago, November 10, from cerebral hemorrhage, after an illness of seven weeks, aged 49.

Conrad Henry Disse, M. D., died at his home in Nauvoo, Ill., October 21, from senile debility, after an illness of two weeks, aged 78.

W. F. Tait, M. D., Galesburg, died in St. Louis of cancer of the face. Dr. Tait was a graduate of the Physico Medical College of Cincinnati, class of 1866, and was an old practitioner of Galesburg. His age was 66.

Swan Hanson, M. D., died at his home in Moline, October 30, from cerebral hemorrhage, after an illness of three days, aged 84.

G. F. Theodore Hoffman, M. D., died at his home in Niles, Ill., November 1, from bronchial pneumonia, after an illness of six days, aged 85.

Charles Laidlaw, 60 years of age.

Wm. F. Milligan, M. D., died at the Chicago Hospital, Chicago, October 1, twenty-four hours after an operation for appendicitis, aged 37.

Orrin Peak, M. D., died at his home in Oak Park, Ill., October 8, aged 79.

Wm. W. Park, M. D., was struck by a freight train near his home in Woodbury, Ill, October 19, and died a few minutes later.

Wm. Robinson, M. D., died at his home in Chicago, October 10.

Lorenzo A. Snyder, M. D., died at the Augustana Hospital, Chicago, October 16, after an illness of five weeks, and five days after an operation for appendicitis, aged 33.

Samuel Y. Thompson, M. D., died suddenly at his home in Danville, while writing a prescription, October 28, from heart disease, aged 62.

Henry A. Wohlgemuth, M. D., died at his home in Springfield, Ill., November 11, aged 83. Dr. Wohlgemuth had practiced medicine in Springfield for nearly sixty years.

New Incorporations.

The Secretary of State at Springfield granted licenses to the following corporations:

Franklin Appliance company, at Chicago; capital, $1,000; manufacture medical appliances; incorporators, Chase R. Rankin, Shelby B. Nelton and George A. Donnelly.

Good Samaritan Remedy company, capital, $130,000; manufacturing medicine; incorporators, James F. Trout, Enoch F. Wickersham, Arlington W. Austin.

Mexican Medicine company, at Chicago, name changed to Dwight T. Sprague & Co.

The Illinois Medical Journal.

The Official Organ of the State Medical Society.

DECEMBER, 1905.

NEXT ANNUAL SESSION, SPRINGFIELD, MAY 15, 16, 17, 1906.

OFFICERS:

PRESIDENT—H. C. MITCHELL, Carbondale.
FIRST VICE PRESIDENT—W. K. NEWCOMB. Champaign.
SECOND VICE PRESIDENT,—M S. MARCY, Peoria.
SECRETARY—EDMUND W. WEIS, Ottawa, Ex-officio clerk of council.
TREASURER—EVERETT J. BROWN, Decatur.
EDITOR—GEORGE N. KREIDER, Springfield
ASSISTANT EDITOR AND BUSINESS MANAGER—F. R. GREEN, 5627 Lexington Ave., Chicago.

SECTION ONE.

Practice of Medicine, Medical Specialties, Materia Medica, Therapeutics, Etiology, Pathology, Hygiene, State Medicine and Medical Jurisprudence.

J. H. Stowell ..... Chairman
Columbus Memorial Building, Chicago.
H. H. Whitten ..... Secretary
Peoria.

SECTION TWO.

Surgery, Surgical Specialties, and Obstetrics.

J. R. Christie ..... Chairman
Quincy.
S. C. Plummer ..... Secretary
34 Washington St., Chicago.

Committee on Prevention of Tuberculosis.

J. W. Pettit, Ottawa.
C. L. Mix, Chicago.
J. P. Percy, Galesburg.

Committee on Public Policy and Legislation.

Frank Billings, Chicago.
Carl E. Black, Jacksonville.
J. W. Pettit, Ottawa.
The Pres. and Sec'y. Ex-Officio.

Committee on Scientific Work.

J. H. Stowel.
J. R. Christie.
The Pres. and Sec'y. Ex-Officio.

The figures refer to the Councilor Districts.

The Council.

(1) J. H. Stealy, Freeport.
(2) W. O. Ensign, Rutland, Chairman.
(3) M. L. Harris, Chicago.
(4) O. B. Will, Peoria.
(5) J. Whitefield Smith, Bloomington.
(6) C. E. Black, Jacksonville, Clerk.
(7) E. E. Fyke, Centralia.
(8) C. Barlow, Robinson.
(9) J. T. McAnally, Carbondale.

PRESENT ARMY MEDICAL SERVICE A HUMILIATING FAILURE.

"UNTIL THE LINE AND STAFF OFFICERS OF THE AMERICAN ARMY ARE TAUGHT THE NECESSITY OF SANITATION, AND THE MEDICAL OFFICER IS GIVEN RANK AND AUTHORITY TO ENFORCE IT, OUR MEDICAL DEPARTMENT MUST REMAIN A HUMILIATING FAILURE. ITS CONTINUANCE UNDER PRESENT CONDITIONS IS NO LESS THAN AN EVIDENCE OF NATIONAL IMBECILITY."

NICHOLAS SENN HONORED.

Nearly 700 physicians gathered in the great Auditorium dining room Saturday, Nov. 11, 1905, in honor of that untiring worker and remarkable man, Nicholas Senn. The brilliant assembly was promptly photographed and then a Swiss male octette sang the songs of fatherland and thus reminded the guests that Senn was born in the village of Buchs, Canton St. Gallen, and in the house decorated by a harp.

Appropriate remarks were made by the gentlemen presenting the medal and loving cup and then came Senn with a short account of his life and some poetry. For the first time many learned that years ago he had a portion of a cancerous tumor inserted in his arm and that this had been absorbed without any deleterious effects; also that his

graduating thesis was entitled the stimulating action of digitalis, and that his early practice was largely among the children of the small Wisconsin town where he was first located. There has never been any doubt that Senn's genius lay in his remarkable ability to work. Long may he survive to illustrate its value.

WISE COMMENTS FROM KANSAS.

The Editor of the Journal of the Kansas State Medical Society reads the signs right, but is possibly unduly alarmed, since nearly every one understands that O'Gorman, the editor of the American Medical Journalist, is the mouthpiece of the gang that has fattened on the hitherto unorganized profession and the howls he is emitting are to be expected.

The Sheep and the Goats. The movement in the profession toward more thorough organization and the raising of our standard in drug giving and education is raising a tremendous row among those who are hurt thereby. If one wishes to learn the real feelings of those who have hitherto fattened on an unorganized and illy trained profession, one has only to read the American Medical Journalist. The bitterness and malice shown are appalling. Down in Texas where a state association journal has just been started, the private journals are doing their best to get up a row. In other words, the issue has been joined and the character of each journal is being revealed. We, in Kansas may congratulate ourselves that we have no vested interests to fight an altruistic movement such as ours for organization is. We should like to have our readers scan with discriminating minds the fulmination of journals sent them (now more than ever) gratis. Merely calling names is not proof. To assert that a medical "trust" is being formed, does not prove it. To say that physicians are being "coerced," not only does not prove it but rather proves that a wolf is being "coerced" into separating himself from the fold. A little thought shows us that our own self-interest demands that we get together and work together; hence, all hail to the present policy of Editor Simmons and his associates.

MEDICAL LAWS AND SOCIETY DUES IN IDAHO.

Secretary Ed. E. Maxey of the Idaho State Medical Society is evidently a level headed, practical officer and in his last report to that organization he makes the following sensible statements:

"I would urge that this Society at this meeting take some definite action with a view to the organization, political and otherwise of the profession that we may secure such legislation as is needed for the good of the profession and the people of the state. We will get very little recognition from our law makers if we do not insist on it in such a way that they cannot refuse.

"In trying to devise a better method of keeping a check on the dues paid into the District (County) Societies, Dr. Kleinman and myself, after considerable correspondence, adopted the plan of having the District (County) Secretary notify the State Secretary on a specially printed postal card on the day a member pays his dues or membership fee, on receipt of which the State Secretary issues direct to the member a Certificate of Membership good only for the year for which he has paid dues. So far this plan has worked very satisfactorily.

"Dr. Kleinman, Secretary of the South District Medical Society, reports trouble in the collection of dues. Two, three, or more notices are required to get many of the members to 'jar loose.'"

SUCCESS OF THE LEWIS AND CLARK FAIR LARGELY DUE TO VISITING PHYSICIANS.

It is a notorious fact that Expositions are poor investments in a financial way, so that when it was announced that the Portland Exposition of 1905, located on the extreme Western Coast, had more than paid expenses there was considerable surprise and an explanation of the phenomenon was sought.

Many citizens of Portland believe that the result was largely due to the session of the

American Medical Association held there early in July. The Medical Sentinel of Portland editorially says:

How the Doctors Helped the Fair.

When subscriptions were being sought by the committee, whose business it was to raise funds for the entertainment in July of the American Medical Association, it was urged as a reason why these subscriptions should be given, that the doctors would advertise Portland and its Exposition in a way that no other profession would, provided they were suitably received and properly entertained. Any visitor to Portland, coming under pleasant conditions, is delighted with the city; but the visitor who is invited, expected and greeted with open arms of welcome, and properly entertained while here, remembers his visit in a way that one does not, who is simply allowed to shift for himself. The local committee insisted that the visit of the doctors would be a great thing for Lewis and Clark Exposition; that they would return delighted with what they would see here, and they would induce thousands of their friends to come and see the picture that had been such a joy to them. Now that the exposition is over, and now that a retrospect can be taken, we see how true was this prediction of the committee referred to. Mayor Harry Lane sees it, and in a recent interview he said:

"Many do not appreciate it, but it was the doctors of this country who met here in annual convention early in the season that made this fair a success. They came here and saw what we had. They were favorably impressed with the beautiful surroundings and delightful climate. When they left they called the Exposition a perfect gem and when they reached their homes and their patients asked them where they should go to spend the summer, the doctors promptly told them to go to Portland, Oregon, as it was one of the most beautiful places in America. They came and we have reaped the results."

REMARKABLE DECREASE IN THE NUMBER OF MEDICAL STUDENTS.

From Chicago, the greatest medical center of the Western hemisphere, comes the intimation that the number of students attending the high grade medical schools is much less than in former years. We are not advised as to the cause of this diminution but, pending full information on this subject, venture to state some of the causes contributing to this remarkable condition.

First. It is a fact beyond dispute that many other callings offer much greater opportunities for wealth and advancement. This is notably true in commercial lines where comparatively young men are coming to the front as managers and directors, receiving princely salaries for short hours of easy work. They are required to burn no midnight oil for study and their leisure time can be spent on the golf ground or at suburban homes with family and friends.

Second. It is undoubtedly true that the past few years has shown a remarkable decrease in the prevalence of sickness. Old practitioners unite in saying that no such healthy period as the past eight months has been known to them. Physicians having exclusive practices in a given territory have told us that they could have spent the whole summer away from their locations without great loss to themselves or their clients. Our columns have shown that many practitioners have been absent for several weeks looking after business interests in southern and western states or territories. An increasing number of physicians are leaving the practice to engage in purely business enterprises.

Third. The attraction of the second rate, poorly equipped, easy-to-pass examination—medical school of this and other states is certainly detracting from the best medical schools. While the attendance is decreasing at the best schools we believe that the attendance at the second rate schools is markedly increasing.

Fourth. The methods of certain State Boards of Health and Boards of Medical Examiners has undoubtedly had an effect in decreasing the attendance at the best medical schools. It is said of some boards, that while they make it difficult for graduates of schools giving a good, reliable medical education to secure a license, they make it easy for the graduate of a poor school to enter

upon the practice. A firm in St. Louis has tabulated the questions asked by the various examining bodies and supplies them to recent graduates for a small sum. In order to obviate this evident abuse some of the more reputable boards are abandoning the method of examination by means of written answers and are requiring candidates to submit to oral questioning and to present evidences of medical knowledge by conducting an examination of an invalid before the entire board. Besides passing examination on questions which they have in one way or another obtained, candidates have acknowledged that they obtained the coveted license by means which lead many to believe that some of the boards or their executive officers should be abolished altogether.

Correspondence.

SEND IN YOUR NAMES.

St. Louis, Mo., Nov. 22, 1905.

Dear Sir:

With a view to opening sub-recruiting stations in the various cities of Illinois, I have to request that you furnish me a list of the County Societies in affiliation with the State Medical Association of Illinois, in order that I may be placed in commutation with a Doctor in each city, whose services I might secure for the purpose of examining applicants for enlistment.

Very sincerely,

Melville J. Shaw,

Captain, U. S. M. C., in Charge of Recruiting District.

THE MOTOR WAGON.

White Hall, Ill., November 3, 1905.

Geo. N. Kreider, M. D., Springfield, Ill.

Dear Doctor: In last month's issue of the Illinois Medical Journal you ask for experiences of doctors in the use of the motor wagon as a practical means of transportation in every day work. As I am now completing my second season with one, am very glad to give you the results of my experience.

For more than twenty years it has been my dream to have some sort of mechanical power applied to my road wagon, and at least that long ago I corresponded with a firm engaged in the manufacture of gasoline engines with a view to interesting them in the adaptation of their engine to a road wagon. They expressed a perfect willingness to "experiment" at my expense.

As now made, all machines have too much speed and most of them insufficient power. For pavements and macadamized roads we probably have many machines that are successes, but which by some alterations could be deprived of many of their present sources of annoyance and expense. In the first place the prospective purchaser must get out of his head the notion of great speed. An average of fifteen miles an hour on the road is all that any machine should attempt with a good road, faster than this is an outrage on people using the roads with horses, to say nothing of being unsafe for the motorist.

For country roads the machine should have large wheels—mine has—hind wheels forty-eight; front wheels, forty-four inches in diameter; these have solid rubber tires and on hard roads and pavements, this machine will run every day in the year. For country roads the tires should be steel with small calks to prevent slipping of hind wheels when power is applied and skidding of all wheels on inclines or turning. With such a wheel one can make fifteen miles an hour on good roads, which speed is comfortably made on steel tires behind horses, as long as the horse desires to continue.

For pavement and hard roads the solid rubber tires, with which the machine is equipped, are better. These wheels run on a dead axle, set to the same gather and dished, as an ordinary wagon wheel, running always on a plumb spoke and with a true revolution.

My machine has two air-cooled cylinders, giving about seven horse-power; it has no

differential gear and the transmission is very simple. With twelve horse-power engine, and some minor changes, this should be a practical every-day machine for country roads when it is suitable to use wheels. However, so long as the manufacturers can sell them faster than they can turn them out, they will not listen to any suggestions that may be made from the user, especially if it involves any additional expense in the manufacture or change of machinery. This machine is much more convenient than a horse, safer and does the work in just half the time or less, day in and day out. *But* the makers put them together in a hurry, there was nothing almost correctly adjusted, and many things had to be made over, all of which for a novice was disgusting for the first season.

My legitimate expenses for repairs for the two seasons have not amounted to more than having a horse shod twice, work that should have been done at the factory and was not, has been expensive. The cost of gasoline is not nearly so great as horse feed, lubricating oils do not amount to much as expense. When the users begin to understand what they want before they buy, the motor wagon will begin to assume a more practical shape, You can be sure it has come to stay.

Sincerely,

H. W. CHAPMAN.

THE AUTOMOBILE-GASOLINE.

Flanagan, Ill., November 8, 1905.

To the Editor:

Dear Doctor: In pursuance of your request I will give you a few items about my experience with the automobile. It was with many misgivings that I decided to try the auto in my practice, having heard many stories as to their unreliability and how they would always take a fellow out of town and not bring him back. So the harrowing possibility of starting on an emergency call, getting part of the way and having to walk the rest and being ignominiously hauled home by a farmer's team was thought of.

However, being of an unusually courageous disposition I made the order. The car came, also the entire male population turned out to see it unloaded. This is a small country town. Having never had anything to do with an auto in any way, I received plenty of good advice as to the running of it. I read the instruction book over carefully, that came with the machine, looked over it for several days then took it out on the street and run it around some on low speed and as it did not try to climb any telephone poles or explode, I was bold enough to attempt to make a call three miles in the country with it the next day. This was not emergency call but one that could have been put off for a day or two without detriment to patient. I started on the low speed, got out half a mile and put on high speed and as nothing happened I advanced the sparker and opened throttle and arrived at destination without incident or loss of time. On the return trip, one farmer said I was going a mile a minute when passing his place, so arrived in town without loss of time. To make a long story short I have since that time run the machine over 2000 miles without anything happening.

The longest that I have been detained at any time was due to poor cylinder oil which allowed the cylinder to heat and I had to wait 30 minutes for it to cool. Have had one puncture in that time which is no harder to mend than the bicycle. I have had very little trouble with horses scaring as they have become accustomed to it much quicker than I supposed. I find I can do the road work in half the time. Running the machine rests a person as nothing else will, as it takes your mind from your troubles. I have made 45 miles making calls a day, got home for early supper and was not all tired out. In warm weather you need not fear overheating as will horses. You get no dust and never suffer from heat. It has saved many calls when being at one extreme of territory you get a hurry-up call at the opposite extreme they will wait for you as you can get there as quick as anyone. When on a tedious confinement case you can leave it for short periods to go and make other calls and driving the machine is as good as a prolonged vacation. I run my machine on a trip, 275 miles across the state and back over hills, the steep-

est and longest that I have seen in Illinois crossing the river at Chillicothe going straight through to Galesburg on west with my family of four persons and had nothing happen to mar the trip. The expense of this trip was $3.75 for gasoline and oil. The machine is a 16 horse power Reo Touring car, detachable tonneau making a runabout car which you can use for pleasure as well as business. In any case I would say get only a two cylinder car with an abundance of power with construction as simple as possible. As to the life of the auto I have no reliable data but my machine shows no signs of wear, not excepting times I count on using machine seven months of the year with mud clogs on. I will run through any mud we have in summer. My machine has cost me but $1 to present time outside of gasoline and oil and I have used the machine almost every day. I may have been unusually fortunate in my experience with the auto but can say that it has made the work nothing but pleasure during the hot weather instead of being entirely worn out as is usually the case.

With these few disconnected remarks, I will have to close.

Yours fraternally,

E. E. McCoy, M. D.

CORRESPONDENCE SCHOOLS.

Chesaw, Wash., Nov. 8, 1905.

State Medical Association,

Springfield, Ill.

Gentlemen: Please inform me if a graduate of an osteopathic correspondence school has a right to practice osteopathy in your State.

I see a correspondence school in Chicago that is incorporated under Illinois State Laws, claims the right by law to grant diplomas to its graduates.

Thanking you in advance for an early reply, I am, Yours, respectfully,

C. T. Kramer.

News Items.

Dr. Shearl has removed from Springfield to Riverton.

Dr. J. R. Allen has removed from Springfield to Glenarm.

Dr. J. W. D. Mayes of Illiopolis, has removed to Springfield.

Dr. E. A. Knodle has removed from Beardstown to Springfield.

Dr. Geo. L. Crocker of Springfield, has removed to Twin Falls, Idaho.

Dr. J. K. Elder of Virginia, Cass County, has removed to Murrayville, Morgan Co.

Dr. H. P. Harder is erecting an $18,000 residence at Hinman avenue and Main street, South Evanston.

Dr. Jerome B. Thomas who was surgeon of the 24th Illinois Volunteer Infantry during the Civil war, is now Governor of the National Soldiers Home, at Dayton, Ohio.

Branchial Fistula Outlined.

Dr. W. F. Campbell of Brooklyn finding it difficult to follow the course of a branchial fistula of the neck hit upon the expedient of injecting the fistula with a parafine solution and thus caused the fistula to stick out like a whip cord. He dissected the fistulous tract up as far as the tonsilar opening and then inverted it into the pharynx and tied it off at that point.

HE ADVERTISED HIS FATHER'S BUSINESS.

Dr. Oliver Wendell Holmes once made an address in his native town to a medical association. The president of the association was the son of a man who had been the druggist of the village when Dr. H—— had studied medicine there. "It is good to look at this young man," said the genial autocrat, "and trace his father's liniments in his face." — Men and Women.

H. D. EASTERLY OF PEORIA AGAIN STEPS INTO THE LIME LIGHT.

Dr. Wm. T. Dowdall of 105 S. Jefferson ave., Peoria, requests physicians who have fallen under the "hypnotic eye" of H. D. Easterly to communicate with him at once. The following clipping from the Peoria Star of recent date tells the story.

On a charge of false imprisonment, Drs. Wm. Dowdall and Guy G. Dowdall, sons of William Tecumseh Dowdall, are made defendants in a suit for $15,000 damages by Harry D. Easterly. The plaintiff is represented by A. H. Burke and the suit was filed in the circuit court yesterday afternoon.

From the papers filed in the case it appears that during the month of May, 1903, Easterly was representing a certain insurance and in-

vestment company. The Dowdalls claimed that they were induced to pay Easterly a certain sum of money for the appointment on the promise that it would be returned in the shape of fees. Later Easterly was arrested on a charge of obtaining money under false pretenses. He was given a preliminary hearing and bound over to await the action of the grand jury, but that body ignored the case.

Some time afterward the firm of Dowdall & Dowdall was dissolved. William coming to Peoria. This city is also Easterly's headquarters and after he was released on bail he came here. He claims that when he was arrested the matter was given considerable publicity and eventually ruined his business. This he estimates to have been worth $15,000 and accordingly he is asking the court to make good that amount.

The following advertisement appears in a daily printed in one of the thriving cities of Illinois:

PROFESSIONAL CARDS.

W. L. R., A. M. M. D.

REGULAR PHYSICIAN AND SURGEON.

Diseases of Women and Children a Specialty. Catarrh, Piles and Skin Diseases Specialties. Medical Supplies from all Central Points of the New and old world timely received.

Chicago Items.

Dr. R. M. Tafel of Chicago, has removed to Phoenix, Ariz.

Dr. Frankenthal of Chicago, was seriously injured and his automobile was smashed almost to pieces in a recent collision with a coal wagon.

Certain Chicago undertakers are said to pay commissions to physicians and clergymen for influencing their clients to patronize their establishments. The usual graft is said to be $25.00.

Dr. D. M. Provan, 709 Milwaukee ave., Chicago, has been recently sued by Robert Schmid of 357 Wood st., for the alleged alienation of his wife's affections. Dr. Provan gave bonds for his appearance in court.

Dr. Noble M. Eberhart of 103 State st., was recently defendant in a suit for divorce brought by his wife. The decree was based on charges of "willful" desertion. Mrs. Eberhart appeared nervous when she took her seat on the witness stand.

"Your bill states that your husband willfully deserted you," said Judge Mack. "Did he give you any reason for leaving you?"

"No," replied Mrs. Eberhart, "he simply packed up his clothes one night at our home in Lake Park avenue and left without saying a word."

Mrs. Eberhart told the court that after her husband's departure she had pleaded with him to return to her for the sake of their child, Dorothy, 7 years old, but that he refused.

Dr. Max Herzog, formerly of Chicago, now pathologist of the Bureau of Government Laboratories at Manila has gone to Japan to study beri-beri. It is said to be very prevalent in Japan at thi stime.

ONE SUICIDE EVERY 18 HOURS.

That is Cook County's Record for the Last 18 Months, According to Coroner Hoffman's Report.

Coroner Hoffman's report to President Brundage of the county board shows that in the eleven months previous to November 1, there were 421 suicides in Cook County, 120 deaths due to street car accidents, 5 caused by automobiles, 321 by railroad accidents, 187 homicides, 201 deaths due to falls, 157 to burns and scalds. The causes of 82 deaths were undetermined.

The coroner held 3,173 inquests, and the cause of death was found to be natural in 1,151 cases.

"According to the coroner's report," President Brundage said, "there have been more deaths from railroad accidents in Cook County in the last eleven months than there were from similar causes in all of England during the same period. The suicides were at the rate of one every eighteen hours."

NEW HOSPITAL IS DEDICATED.

Archbishop Quigley and Others Assist at the Consecration of Hotel Dieu Institution.

Elaborate religious exercises marked the dedication of the new Hotel Dieu hospital, Sixty-fourth street and Harvard avenue, November 21st. Pontifical high mass was celebrated by Archbishop James E. Quigley, following which a breakfast was served by the ladies auxiliary of the hospital.

The ceremonies began at 9 o'clock when the archbishop, accompanied by a score of visiting clergymen and the members of the Order of the Hospital Sisters of St. Joseph, who will have charge of the institution, marched through the marble halls and corridors of the building, blessing and dedicating it to the care of the sick and the unfortunate. Following the celebration of mass Archbishop Quigley delivered the dedicatory address.

The day also was the thirty-seventh anniversary of the day Mother Superior Hopkins, head of the hospital, entered the order.

The hospital cost $400,000, and will have accommodations for 300 patients.

County and District Societies.

CRAWFORD COUNTY MEDICAL SOCIETY.

Regular meetings are held bi-monthly on the second Thursday. Membership 24.

Officers.

President.....Dr. Frank Dunham
Vice-President.....Dr. L. R. Ilyes
Secretary.....Dr. H. N. Rafferty
Treasurer.....Dr. C. Barlow
Board of Censors: Dr. G. W. Fuller, Dr. C. H. Voorheis.
Committee on Arrangements: Dr. I. L. Firebaugh, Dr. C. Barlow, Dr. H. N. Rafferty.

—

The Crawford County Medical Society held its regular bi-monthly meeting Thursday, Nov. 9th., 1905, at the office of Drs. T. N. & H. N. Rafferty, in Robinson. The minutes of the previous meeting were approved as read.

It is a well recognized fact that the progressive and wide-awake physicians of any community seldom miss an opportunity to attend their local meetings, and this truth is well demonstrated in our county.

There were nineteen present at this meeting, as follows:-

Drs. T. N. Rafferty, I. L. Firebaugh, C. Barlow, A. G. Meserve, E. L. Birch, Frank Dunham, H. N. Rafferty and Gould Smith, of Robinson: Drs. C. H. Voorheis and J. B. Cato, of Hutsonville: Drs. R. L. Gordon and J. A. Ikemire, of Palestine: Drs. J. H. McGovern and S. Smith, of Annapolis: Dr. J. W. Kirk, of Oblong: Dr. C. E. Price, of Eaton: Dr. LeRoy Newlin, of Hardinsville: Dr. J. E. Midgett, of Flat Rock: and Dr. W. C. Hayhurst, of Birds.

Dr. Gould Smith, of Robinson, was nominated for membership in the society, to be voted on at the next regular meeting.

The first paper of the afternoon was "A Report of Three Cases of Wood Alcohol Poisoning" by Dr. W. C. Hayhurst. The author presented this subject in a most interesting manner, his paper being followed by a very general discussion, in which several members mentioned cases coming under their notice, following lemon extract, bay rum, and Jamaica ginger drinking.

D. J. M. Mitchell was on the program for a paper on "Irritations of The Respiratory Mucous Membrane," but was unable to attend. On motion of the society, his paper was carried over for the next meeting.

The program was completed by an essay on "The Crawford County Medical Society in The Past," by Dr. E. L. Birch. This proved to be a very interesting sketch of the history of our organization for the past eighteen years, being void of the usual dryness of history, and made amusing by an occasional side-light on the trials and tribulations of the individual members during the early years of the author's membership.

Dr. Birch strongly upheld the custom of the society in guarding its portals against irregular and unethical practitioners, and believed that was mainly responsible for the excellent reputation which is borne by The Crawford County Medical Society, both at home and abroad. The paper was discussed at length by all present, and on motion was spread upon the minutes of the society.

Dr. H. N. Rafferty exhibited a stony concretion from the appendix of a man operated on the eight day of a first attack of appendicitis.

The concretion was very dense and of unusual size, having caused a perforation, accompanied by the formation of a large abscess. The patient's recovery was uneventful.

In the matter of business, Dr. H. N. Rafferty was elected as delegate to the coming meeting of The Ilinois State Medical Society, at Springfield.

It was announced that The Aesculapian Society of The Wabash Valley had been invited to hold its semi-annual meeting in Robinson, in May, and accordingly it was moved and seconded that the members of The Aesculapian Society be entertained at Robinson as the guests of The Crawford County Medical Society. The motion was carried unanimously.

It was moved and carried that the President appoint a committee of seven members, to prepare for the entertainment of The Aesculapian Society, this general committee to have the power to appoint sub-committees, as it sees fit.

The Chair named the committee as follows:- Dr. H. N. Rafferty, Chariman, Dr. W. C. Hayhurst, Dr. C. E. Price, Dr. J. W. Kirk, Dr. J. A. Ikemire, Dr. J. B. Cato, and Dr. J. E. Midjett.

The Secretary read a communication from Dr. G. N. Kreider, asking the society to instruct its delegate in regard to the establishment of a medical defense fund in the State Society. On motion the letter was placed on file, for future reference.

Dues were collected to the amount of $35.50 at this meeting.

After the transaction of other business, the society adjourned, to meet in January, 1906, at the office of Dr. I. L. Firebaugh, in Robinson.

R. N. Rafferty.
Official Reporter.

MILITARY TRACT MEDICAL ASSOCIATION.

Officers.

President ..... R. C. Matheny, Galesburg
1st Vice Pres.....W. E. Shellenberger, Canton
2d Vice Pres.....J. P. Roark, Bushnell
Sec'y-Treas.....F. E. Wallace, Monmouth

Place of next meeting, Macomb, Ill., 20th and 21st of October, 1906.

The regular annual meeting was held at Canton, October 19th and 20th, 1905. The officers were elected as above. The following

scientific program was heard, and resolution passed. The attendance was large and enthusiastic.

President's Address.

I. F. Harter, M. D., Stronghurst—**The Character of the Ideal Physician.**

Scientific Program.

1. Palmer Findley, M. D., Rush Medical College, Chicago—**Discussion of Ectopic Pregnancy, with Specimens to Illustrate.**

2. W. M. Roberts, M. D., Norris—**Some Footprints of a Prehistoric Race.**

3. G. L. Eyster, M. D., Rock Island—**Some of the Complications and Emergencies in the Surgical Treatment of Ovarian Cystoma.**

4. J. B. Bacon, M. D., Macomb—**Fracture of the Femur. Separation of the Lower Epiphysis with Report of Two Cases.**

5. L. R. Barstow, M. D., Quincy—**The Treatment of Acute and Chronic Gastritis.**

6. Isis M. Mayden, Superintendent of Hospital, Monmouth—**What Should be the Relation of the Small Hospital to the Work at Large?**

7. D. S. Ray, M. D., Cuba—**Anorexia, Why?**

8. C. B. Horrell, M. D., Galesburg—**An Interesting Case in Diagnosis, Confirmed by Surgical Operation.**

9. L. A. Rutherford, M. D., Peoria—**Hyperchlorhydria.**

10. E. C. Franing, M. D., Galesburg—**Appendicitis from the Pathologists View.**

11. S. M. Miller, M. D., Peoria—**Pulsating Tumors, Their Varieties and Differential Diagnosis, with Report of Cases and Presentation of Specimens.**

Resolutions on Patent Medicines.

Be it Resolved by the Military Tract Medical Association, comprising the territory between the Illinois and Mississippi rivers and in annual session assembled; that we commend the efforts being made by the Ladies Home Journal of Philadelphia and Colliers Weekly of New York, to expose the evils of the patent medicine business in this country; be it

Resolved, That we earnestly suggest to the Daily and Weekly Press of the Military Tract the propriety of their aiding the great journals above mentioned in their very worthy efforts to rid the country of the patent medicine business. For the reason that this business in a great measure depends for its pernicious success on alcoholic stimulants or some form of opium as the active ingredient of their so called medicines; be it further

Resolved, That the newspapers which advertise medicines to produce criminal abortion; to restore lost manhood; to relieve the pangs of childbirth and houses of ill fame are in league with a class of criminals who without conscience prey into oblivion were it not for the aid given them through the medium of the paid advertisement in the Daily and Weekly Press.

Respectfully submitted,

Maud Rogers, M. D., Cuba,
J. B. Bacon, M. D., Macomb,
J. F. Percy, M. D., Galesburg.

SANGAMON COUNTY MEDICAL SOCIETY.

Regular meetings are held at the Lincoln Memorial Library in Springfield the second Monday of each month at 8 p. m.
Membership 80.

Officers.

President.....W. O. Langdon, Springfield
Vice President.....R. D. Berry, Springfield
Secretary-Treasurer....C. R. Spicer, Springfield
Directors, B. B. Griffith, E. E. Hagler, A. D. Taylor.

—

The monthly meeting of the Sangamon County Medical Society was held Oct. 16, 1905 in the Lincoln Library. On the regular date, 10-9-05, for meeting the room was not available.

Twenty members and three visitors were in attendance. The later were Dr. Remby of Lincoln, Ill., Dr. ———— of ———— and Dr. H. L. Taylor of Denver. Dr. Taylor is ass't Chief Surgeon to the D. N. W. & P. R. R., also Ass't Div. Chief Surgeon to U. P. R. R. He is at present, Sec. State Board of Health of Col. The freedom of the society was extended to the visitors.

Drs. Mays, Fink and Monroe and Castle were elected to membership in the society. The committee appointed to visit the dairies claiming to be under sanitary management reported progress and asked for another month in which to finish their work.

A communication from the Sec. State Medical Society concerning the next annual meeting was read. Dr. Kreider moved that the chair appoint a committee on arrangements. The motion carried and president will name members of committee at next meeting.

The Society voted to hold its annual meeting. The arrangements will be in the hands of the board of censors. Dr. Kreider called attention to the fact that there is move on foot looking foward to some action whereby members of the profession, for nominal fee are to be protected from malpractice suits. In case such suits are, any member so insured is to be defended at the expense of the insurance company. It was stated that members of the state society would be given a voice as to whether the State society should have charge of such insurance scheme.

The literary program consisted in a talk by Dr. Young on "His impressions gained by a visit to the Mayo Bro's Hospital." The talk was most interesting and instructive including as it did a biographical sketch of these celebrated surgeons, a description of their hospital, manner of preparing their patients for operation but more particularly the methods employed at present by them in different classes of operation.

Special mention was made of the matter of draining abdominal wounds when necessary, by a stab wound thus preventing herniae. Many details of much importance were described and the fact that they are bound to no routine technic noted. A summary of the results were given showing that even allowing for the favorable conditions under which their

work is done the mortality is remarkably low.

The talk was well received. The principal discussion was along the line of mortality. Dr. L. C. Taylor pointed out the fovorable conditions under which much of their work is undertaken and said that their mortality should not be compared, without proper allowance, with that of surgeons in larger cities who took the work as it came.

The meeting closed in order W. O. Langdon, Pres.

C. R. Spicer, Sec.

The Sangamon County Medical Society held its seventh annual meeting and banquet at the St. Nicholas Hotel Nov. 13, 1905. Forty-one guests and forty-six members were present as follows:-

G. W. Bradley, Waverly.
Chas. J. Graser, Springfield.
G. L. Armstrong, Taylorville.
F. E. North, Taylorville.
G. N. Kreider, Springfield.
T. W. Morgan, Virden.
J. H. Fountain, Chapin.
E. L. Crouch, Jacksonville.
J. H. Eddy, Decatur.
S. E. McClelland, Decatur.
W. D. Bowers, Decatur.
J. C. Rigg, Springfield.
Clara A. Garber, Decatur.
Helen A. Babb, Springfield.
L. Estelle Paullin Padgette, Springfield
J. C. Fischer, Decatur.
E. A. Morgan, Decatur.
J. Kenyon Elder, Murrayville.
M. H. Farmer, Virden.
R. L. Morris, Decatur.
A. K. Van Horne, Jerseyville.
W. S. Taylor, Tallula.
M. P. Parrish, Decatur.
D. W. Ottis, Springfield.
Lyn M. Barnes, Decatur.
Herbert C. Jones, Decatur.
G. W. Rice, Cantrall.
T. F. Hill, Athens.
A. D. Taylor, Springfield.
A. L. Stuttle, Williamsville.
E. H. Brittin, Chatham.
W. A. Brittin, Auburn.
Nathan L Bourne.
A. L. Brittin, Athens.
B. B. Griffith, Springfield.
Benjamin Bachrach, Decatur
Geo. Crocker, Springfield.
L. H. Crocker, Springfield.
L. H. Clark, Decatur.
L C. Taylor, Springfield.
W. O. Langdon, Springfield.
F. M. Anderson, Decatur.
W. A. Dixon, Decatur.
E. E. Hagler, Springfield.
S. E. Munson, Springfield.
A. F. Wilhelmy, Decatur.
T. J. Pitner, Jacksonville.
C. L. Patton, Springfield.
Chas. McElfrish, Springfield.
J. S. King, Decatur.
J. W. Robinson, New Berlin.
H. C. Blankmeyer.
J. L. Taylor, Springfield.
Rev. E. Francis Irwin, Springfield.
John T. Miller, Decatur.
C. P. Colby, Springfield.
C. H. Walters, Springfield.
M. M. Bradley, Chatham.
Geo. A. Wash, Palmyra.
W. E. G. Mayes, Dawson.
E. J. Brown, Decatur.
A. Trapp, Springfield.
A. E. Prince, Springfield.
J. J. Conner, Pana.
C. Chenoweth, Decatur.
J. V. White, Auburn.
Roy Rogers, Springfield.
O. H. Deichman, Springfield.
M. Altman, Springfield.
C. T. Nelson, Sqringfield.
O. A. McIntosh, Pleasant Plains.
Frank P. Norbury, Jacksonille.
John Deal, Riverton.
Stanley Castle, Springfield.
Dr. Monroe, Springfield.
A. E. Walters, Springfield.
F. C. Metcalf, Springfield.
R. D. Berry, Springfield.
J. H. Taylor, Springfield.
P. H. Taylor, Springfield.
C. M. Bowcock, Springfield.
Dr. Metz, Springfield.
H. H. Tuttle, Springfield.
W. Ryan, Springfield.
J. Palmers Matthews, Carlinville.
J. F. Duour, Chicago.
J. C. Walters, Springfield.
C. R. Spicer, Springfield.
B. W. Sippy, Chicago.

An informal reception was held in the hotel parlors after which the meeting was called to order by President Langdon. Minutes of the previous meeting were read and approved and the application of Dr. J. W. Robinson of New Berlin was read and referred to the board of censors. The committee appointed to visit the dairies alledged to be under sanitary management asked for more time. A communication from the editor of the Illinois State Medical Journal concerning a legal medical defense fund was read and a vote endorsing it was cast. The usual fee of ten dollars was allowed the Secretary-Treasurer.

The following officers were elected for the ensuing year. President, Dr. R. D. Berry; Vice-Pres., Dr. J. W. Kelley, Sec-Treas., Dr. C. R. Spicer, Censeors: Drs. C. P. Colby, C. L. Patton and O. B. Babcock.

After the election of officers the members and guests repaired to the dining hall where one of the most successful banquets in the history of the society was enjoyed. President Langdon proposed the toast: "The Country Doctor." Dr. G. W. Rice of Cantrall responded. Prof. Bertram W. Sippy of Chicago, the guest of honor for the occasion entertained the society with a lecture on Cardio-spasm. The lecture was clinical in nature a case being presented on whom was demonstrated the use of the esophageoscope. A forcible dilatation of the obstructed portion of the esophagus was done

before the society by means of an instrument which Prof. Sippy has devised.

This instrument consists essentially of an esophageal bougie around the olive tip of which a rubber bag is secured and to which air may be delivered under pressure by a bulb in the hand of the operator and connected with the bulb at the extremity of the bougie by means of a tube. The degree of extension permitted by the rubber bag is limited by a silk bag surrounding it and secured in the same manner. The patient presented was operated on once previously. He had enjoyed several months freedom from his difficulty which returned suddenly after a debauch.

A number of cases of like character were reported as having been relieved in the same manner, some by one, most by two and a few requiring three treatments. The diagnosis of this condition was dwelt on and a case reported in detail, with pathological specimens, which showed the difficult problem which might be presented by such a case.

The lecture and demonstration were most instructive and satisfactory.

OGLE COUNTY MEDICAL SOCIETY.

Regular meetings are held quarterly at Oregon. Membership 25.

Officers.

President.....J. A. Johnson, Byron
Secretary.....W. K. Farley, Oregon
Treasurer.....L. E. Schneider, Oregon
1st V. Pres.....Jas. Parkhurst, Grand Detour
2nd V. Pres.....J. Kretsinger, Leaf River

The quarter annual meeting of the Ogle County Medical Society, met in the Court House, Oregon, Ill., Nov. 1st, 1905. The meeting was called to order by Dr. J. A. Johnston, President. The following members were present: J. A. Johnston, D. A. Vanderhoof, L. E. Schneider, J. B. Reve, H. H. Sheets, E. F. Hendricks, J. F. Van Voorhis, M C. Reve, C. J. Price, W. W. Hanes and W. K. Farley.

The minutes of the previous meeting were read and approved, after which Dr. Earl T. Hendricks read an able paper on Infant Feeding, which was freely discussed by all present.

Dr. D. A. Vanderhoof read a good paper on Nephritis, which was freely discussed and sifted by the members.

Dr. C. J. Price read a good paper on Auto-Intoxication, which brought forth a very interesting dicussion.

All present enjoyed the meeting and declared that it was interesting and instructive. The meeting adjourned to meet in three months.

WABASH COUNTY MEDICAL SOCIETY.

The Wabash County edical Society met at Mt. Carmel, October 31, 1905.

A symposium on **Tuberculosis** was discussed by Drs. J. C. Utter, E. A. Buchholtz, J. Schneck and W. S. Schneck.

Dr. J. B. Maxwell spoke on the best method of keeping and collecting accounts.

The following resolutions were passed and sent to the Ladies Home Journal and Colliers Weekly.

Whereas, The traffic in Patent Medicines is attended with serious consequences to the individual, often imperiling and destroying life; and,

Whereas, The science of medicine is, by the use of such nostrums prevented from extending its beneficient work; and,

Whereas, The many publications of our country devote so much space to the advertising of such harmful mixtures containing so large a per cent of Alcohol; and,

Whereas, You have undertaken a fearless, energetic and practical expose and attack upon this enemy to life and science; we, therefore,

Resolve, That the science of medicine owes you our sincere appreciation for so truthful a presentation of the evils, deceptions, and the facts regarding this baneful industry to the public, and advertisers of these nostrums; and,

Resolve, That the Medical Journals should assist in destroying this traffic which is so inimical to the progress of merical science, and lives of the people; and,

Resolve, That this Society send these resolutions to the Journal of Americal Medical Association, and the Illinois State Medical Journal.

THE SOCIETY OF SANITARY AND MORAL PROPHYLAXIS OF NEW YORK CITY.

Held a meeting October, 12, at which the following subjects were discussed.

1. Should the youth of the country be educated in a knowledge of Sexual Physiology and Hygiene?

2 What should be the nature and scope of this education?

3. At what age should this instruction be given, and should it be progressive according to the age of the individual?

Should our educational centres—high schools, colleges and universities—be utilized for this purpose?

5. Should the teaching of Sexual Physiology be incorporated in our text-books of Elementary Hygiene?

As the educational feature of the Society's work is an important one, the Executive Committee would be glad to have a general expression of the opinion from the medical profession as to the availability and practical value of this proposed education. Physicians who have given serious thought to the subject are invited to send to the Secretary their views upon any or all of the questions submitted for discussion. Such communications will be analyzed and tabulated and form the subject of a report by the committee on Education.

Yours truly,
E. L. Keyes, Jr.

Chicago Medical Society.

The Medical Society of Cook County, Regular meetings are held every Wednesday evening from October to June at the Chicago Public Library Building, Randolph Street Entrance in the large hall on the ground floor toward West end of the Building.

OFFICERS:

C. S. BACON, 426 Center Street.....President
FRANK X. WALLS, 4307 Ellis Avenue.....Secretary
A. E. HALSTEAD, 2937 Indiana Avenue.....Treasurer
W. A. EVANS, 103 State Street.....Chairman Medicolegal Committee
WM. HARSHA, 103 State Street.....Chairman Membership Committee

DECEMBER, 1905.

THE CHICAGO MEDICAL SOCIETY.

Officers and Committeess of The Chicago Medical Society, and its Sections and Branches.

	Term expires
Pres't. C. S. Bacon, 426 Center St.	June 1906
Sec't. Frank X. Walls, 103 State St.	June 1906
Treas. W. L. Baum, 103 State St.	Oct. 1906
Trustees C. B. Reed, 103 State St.	Oct. 1908
D. J. Doherty, 100 State St.	Oct. 1907
F. S. Johnston, 2521, Praire Ave.	Oct. 1906

Councilors at Large.

1. C. S. Bacon, 426 Center St.....June 1906
2. A. D. Bevan, 100 State St.....June 1907
3. F. Billings, 70 State St.....June 1907
4. A. R. Edwards, 100 State St.....June 1906
5. W. A. Evans, 103 State St.....June 1906
6. A. Gehrmann, 103 State St.....June 1906
7. G. W. Green, 1296 E. Ravensw'd Pk.
8. M. L. Harris, 100 State St.....June 1906
9. J. C. Hepburn, 3601 S. Halsted St..June 1908
10. J. S. Hunt, 440 Englewood Ave....June 1908
11. M. H. Luken, 826 N. Irving Ave...June 1908
12. R. B. Preble, 103 State St.....June 1907
13. J. C. Stubbs, 980 W. 22nd St.....June 1908
14. J. H. Stowell, 103 State St.....June 1907

Alternate Councilors at Large.

1. A. L. Bouffleur, 100 State St.....June 1908
2. F. B. Earle, 903 W. Monroe St.....June 1908
3. A. E. Halsted, 103 State St.....June 1908
4. Wm. Harsha, 103 State St.....June 1908
5. Weller Van Hook, 103 State St.....June 1908

Councilors From Affiliated Societies.

	Term Expires
Dermatological—L. C. Pardee, 34 Washington St.	Jan. 1906
Gynecological—T. J. Watkins, 103 State St.	Oct. 1906
Alternate—Junius C. Hoag, 4669 Lake Ave.	Oct. 1906
Laryngological—E. F. Ingals, 34 Washington St.	Jan. 1906

Medical Examiners' Association.

Medicolegal—E. J. Doering, 2458 Indiana Ave.	June 1906
Neurological—Sydney Kuh, 103 State St.	Jan. 1906
Ophthalmological—W. H. Wilder, 103 State St.	Jan. 1906
Orthopedic—W. Blanchard, 34 Washington St.	Nov. 1905
Pathological—Ludwig Hektoen, 762 W. Harrison St.	June 1906
Pediatric—J. C. Cook, 5708 Rosalie court	May 1906
Alternate—Julia D. Merrill, 683 N. Robey St.	May 1906
Surgical—A. E. Halsted, 103 State St.	Oct. 1906
Urological—Wm. T. Belfield, 100 State St.	Oct. 1906

Councilors and Alternates From the Branch Society.

North Side—Rudolph W. Holmes, 412 N. State St.	Oct. 1906
Alternate—Carl Beck, 72 State St	Oct. 1906
North Shore—J. P. Houston, 1180 Sheffield Ave.	June 1906
Alternate—R. C. Whitman, 1735 Pemberton Ave.	June 1906
Evanston—G. W. Boot, 1945 Maple Ave	Sept. 1906
Northwest—E. A. Fischkin, 893 Milwaukee Ave.	June 1906
Alternate—E. E. Henderson, 201 W. Erie St.	June 1906
West Side—J. S. Nagel, 323 S. Western Ave.	June 1906
Aux Plaines—H. E. Dodge, Franklin Park Ill.	Sept. 1906
Lawndale—Clyde D. Pence, 859 Turner Ave.	June 1906
Stock Yards—William Parsons, 841 W. 47th Ave.	June 1906

Southwest—F. R. Green, 6312 Greenwood Ave.....Sept. 1906
Alternate—F. S. Rose, 5420 Halsted St.....Sept. 1906
South Chicago—A. W. McLaughlin, 9139 Commercial Ave.....

Delegates to House of Delegates of Illinois State Medical Society.

	Term Expires
R. R. Campbell, 214 Dearborn St.	Oct. 1907
George de Tarnowsky, 1309 Ainslee St.	Oct. 1907
J. R. Ballinger, 680 W. Division St.	Oct. 1907
J. V. Fowler, 312 Grand Ave.	Oct. 1907
J. H. Hess, 830 W. 63rd St.	Oct. 1907
W. A. Evans, 103 State St.	Oct. 1907
J. L. Abt, 733 S. Halsted St.	Oct. 1907
Frank Billings, 100 State St.	Oct. 1907
C. S. Bacon, 426 Center St.	Oct. 1907
G. W. Webster, 70 State St.	Oct. 1906
A. D. Bevan, 100 State St.	Oct. 1906
W. H. Wilder, 103 State St.	Oct. 1906
F. R. Green, 6312 Greenwood Ave.	Oct. 1906
Wm. Parsons, 841 W. 47th St.	Oct. 1906
Frank X. Walls, 103 State St.	Oct. 1906
J. A. Clark, 832 W. 21st St.	Oct. 1906
H. O. White, 396 S. Halsted St.	Oct. 1906

Alternates to House of Delegates of Illinois State Medical Society.

David Liberthal, 103 State St.	Oct. 1907
G. E. Baxter, 1916 Evanston Ave.	Oct. 1907
Mary McEwen, Evanston, Ill.	Oct. 1907
M. H. Luken, 826 N. Irving Ave.	Oct. 1907
F. L. Rose, 5420 Halsted St.	Oct. 1907
H. N. Moyer, 103 State St.	Oct. 1907
C. D. Pence, 859 Turner Ave.	Oct. 1907
J. L. Miller, 932 W. 86th place	Oct. 1907
H G. Anthony, 92 State St.	Oct. 1907
W. S. Harpole, 103 State St.	Oct. 1906
C. C. Rogers, 70 State St.	Oct. 1906
R. B. Preble, 103 State St.	Oct. 1906
E. E Henderson, 201 W. Erie	Oct. 1906
Richard J. Tivnen, 100 State St.	Oct. 1906
Wm. Harsha, 103 State St.	Oct. 1906
R. Holmes, 412 N. State St.	Oct. 1906
G. F. Butler, Wilmette, Ill	Oct. 1906

Membership Committee.

	Term Expires.
J. C. Hepburn, 3601 S. Halsted St.	Oct. 1908
James B. Herrick, 103 State St.	Oct. 1907
A. Gehrmann, 103 State St	Oct. 1906

Medicolegal Committee.

H. N. Moyer, 103 State St.	Oct. 1908
C. S. Bacon, 426 Center St.	Oct. 1907
W. A. Evans, 103 State St.	Oct 1906

Ethical Relations Committee.

	Term expires.
H. B. Favill, 100 State St.	Oct. 1908
W. H. Wilder, 103 State St.	Oct. 1907
N S. Davis, 70 Madison St.	Oct. 1906

Public Relations Committee.

Chas. J. Whalen, 34 Washington St.	Oct. 1908
Frank Billings,1 00 State St.	Oct. 1907
R. R. Preble, 103 State St.	Oct. 1906

Organization Committee.

R. B Preble, 103 State St.	Oct. 1906
G. E. Baxter, 1916 Evanston Ave.	Oct. 1906
W. L. Ballenger, 103 State St.	Oct. 1906
J. V. Fowler, 312 Grand Ave.	Oct. 1906
J. J. Alderson, 7 Blue Island Ave.	Oct. 1906
W. S. Pickard, Maywood, Ill.	Oct. 1906
T. H. Renn, 926 S. Ashland Ave.	Oct. 1906
Richard J. Tivnen, 100 State St.	Oct. 1906
F. R Green, 6312 Greenwood Ave.	Oct. 1906
W. S. Gilmore, 7210 Woodlawn Ave.	Oct. 1906

Propaganda Committee.

	Term expires.
D. J. Doherty, 100 State St.	Oct. 1906
G. P. Marquis, 103 State St.	Oct. 1906
J. L. Miller, 32 W. 86 place	Oct. 1906

Affiliated Societies Committee (Permanent.)

L. Hektoen, 762 W Harrison St.
Wm. T. Belfield, 100 State St.
Sydney Kuh, 103 State St.
T. J. Watkins, 103 State St.
A. E. Halstead, 103 State St.

Committee on Criminal Abortion (Permanent.)

R. Holmes, 412 N State St.
C. B. Reed, 103 State St.
Alice Hamilton, Hull House.

Permanent Home Committee.

Nicholas Senn., 100 State St.
W. A. Evans, 103 State St.
F. S. Johnston, 2521 Prairie Ave
D. J. Doherty, 100 State St.

OFFICERS OF THE AFFILIATED SOCIETIES.

Chicago Dermatological Society.

Pres., H. G. Anthony.
Vice Pres., F. H Montgomery.
Sec't., L. C. Pardee.
Treas., L. C. Pardee
Councilor, L. C. Pardee.

Chicago Gynecoldgical Society.

Pres., F. T. Andrews.
1st Vice Pres., Jos B. DeLee
2nd Vice Pres., Chas. E. Paddock.
Sec't., H. F. Lewis.
Treas., Chas. B. Reed.
Editor, Rudolph W. Holmes.
Pathologist, Gustav Kolischer.
Councilor, Thomas J. Watkins.
Alternate, Junius C. Hoag.

Laryngological and Otological Society.

Pres., Wm. L. Ballenger.
Secr., Geo. E. Shambaugh.
Treas., Geo. Shambaugh.
Councilor, E. Fletcher Ingals.

Chicago Medical Examiners' Association.

Pres., W. A. Jacquith.
V. P., L. H. Montgomery.
Sec't., Morton Snow.
Treas., Ulysses H. Grim.

Chicago Medicolegal Society.

Pres., E. J. Doering.
Sec't. W. L. Baum.
Treas., Jos. Matteson.
Councilor, E. J. Doering.

Chicago Neurological Society.

Pres., Harold N. Moyer.
Vice Pres., Henry Gradle.
Rec. Sec., L. H. Mettler.
Treas., L. H. Mettler.
Cor. Sec., Chas H. Lodor.
Councilor, Chas. Louis Mix.

Chicago Ophthalmological Society.

Pres., J. E. Colburn.
V. P. H. V. Wurdemann.
Sec't., Thomas Faith.
Treas. Thomas Faith.
Councilor, T. A. Woodruff.
Membership Committee: Oscar Dodd, C. H. Beard, W. H. Wilder.
Councilor to Chicago Medical Society, W. H. Wilder.

Chicago Orthopedic Society.

Pres., John Ridlon.
V. P., John L. Porter.
Sec't., A. B. Hosmer.
Treas., A. B. Hosmer.
Councilor, W. Blanchard.

Chicago Pathological Society.

Pres., H. T. Ricketts.
V. P., Adolph Gehrmann.
Sec't., Geo. H. Weaver.
Treas., Frank B. Earle.
Councilor, Ludvig Hektoen.
Publication Committee: L. Hektoen, H. G. Wells, W. A. Evans.
Censors: N. Mcl. Harris, C. A. Parker, Brown Pusey.

Chicago Pediatric Society.

Pres., S. J. Walker.
V. P., F. S. Churchill.
Sec't., Emma M. Moore.
Treas., Emma M. Moore.
Councilor, J. C. Cook.
Alternate, Julia D. Merrill.

Chicago Surgical Society.

Pres., D. A. K. Steele.
V. P., D. W. Graham.
Sec't., Wm. Hessert.
Treas., F. A. Besley.
Councilors: A. D. Bevan, A. J. Ochsner, E. W. Andrews.
Councilor to Chicago Medical Society, A. E. Halstead.

Urological Society.

Pres., Wm. L. Baum.
V. P., G. Kolischer.
Sec't., J. Allen Patton.
Councilor, Wm T. Belfield.

OFFICERS OF THE BRANCH SOCIETIES.

1. North Side Branch.

President, C. S. Williamson.....Oct. 1906
Vice-President, A. Belcham Keyes....Oct. 1906
Secretary, R. H. Herbst.....Oct. 1906
Councilor, Rudolph W. Holmes.....Oct. 1906
Alternate, Carl Beck.....Oct. 1906

2. North Shore Branch.

President, G. E. Baxter.....June 1906
Secretary, Ralph E. Green.....June 1906
Councilor, J. P. Houston.....June 1906

3. Evanston Branch.

President, Geo. J. Tobias.....Sept. 1906
Secretary, C. W. East.....Sept. 1906
Councilor, G. W. Boot.....Sept. 1906

4. Northwest Branch.

President, E. C. Seufert.....June 1906
Secretary, H. E. Wagner.....June 1906
Councilor, E. A. Fischkin.....June 1906

5. West Side Branch.

President, J. J. Alderson.....June 1906
Secretary, C. C. Rogers.....June 1906
Councilor, J. S. Nagel.....June 1906

6. Aux Plaines Branch.

President, Arthur Loewy.....Sept. 1906
Secretary, C. Reiterman.....Sept. 1906
Councilor, H. E. Dodge.....Sept. 1906

Douglas Park Branch.

President, F. J. E. Ehrman.....June 1906
Secretary, Joseph L. Abt.....June 1906
Councilor, Clyde D. Pence.....June 1906

8. Stock Yards Branch.

President, George Bell.....June 1906
Secretary, Thos. McHugh.....June 1906
Councilor, William Parsons.....June 1906

9. Southwest Branch.

President, E. C. Morton.....Sept. 1906
Secretary, C. H. Lovewell.....Sept. 1906
Councilor, F. R. Green.....Sept. 1906
Alternate, F. L. Rose.....Sept. 1906

10. South Side Branch.

President, Chas. E. Paddock.....Sept. 1906
Secretary, W. S. Harpole.....Sept. 1906
Councilor, Jos. L. Miller.....Sept. 1906

11. South Chicago Branch.

President, Edward M. Webster.
Secretary, John S. Davis.
Councilor, A. W. McLaughlin.
Alternate, A. L. Blackwood.

A regular meeting was held Nov. 1, 1905, with the President, Dr. Charles S. Bacon, in the Chair.

Exhibition of Specimen of Carcinoma of the Head of the Pancreas.

Dr. William A. Evans: I have been asked by Dr. O'Byrne to present this specimen of a tumor of the head of the pancreas, which was was removed at autopsy at the Cook County Hospital this morning. I am not familiar with the case. This is the first time I have seen the specimen. As I understand it, the history is this: The man had been losing flesh rapidly. He lost one hundred pounds during the last fourteen weeks, and died without a diagnosis having been made. At the autopsy this small tumor in the head of the pancreas, involving the ampulla of Vater, with obstruction in the cystic duct, the common duct, and the pancreatic duct, was found. The pancreatic duct was widely dilated, and I think you will notice, as the specimen lies here, that the pancreas is dilated, so that there is a central tube which can be easily made out, large enough to admit a lead pencil. The common duct and cystis duct were also widely dilated.

The hepatic ducts were dilated until some of them show on the under surface of the right lobe as large as a quill.

A few days ago I had occasion to look up the literature of carcinoma of the ampulla of Vater. I found an article in the Journal of Pathology and Bacteriology for 1904 by someone whose name escapes me, who stated that there probably only eight cases of true carcinoma of the ampulla of Vater. A characteristic of the case reported is the very rapid emaciation. The cause of death was probably exhaustion and extreme emaciation. There was no necrosis of the fat in or near the pancreas.

The ducts when injected held about 21 ounces of fluid, that is after the liver had been in a dilute alcohol. The liver decreased in size fully one fourth by expressing the contained bile an Xray picture with the channels injected with lead showed bile canals more than an inch in width.

The vena porta were not involved.

A regular meeting was held Nov. 8, 1905, with the President, Dr. Charles S. Bacon, in the Chair.

Dr. Edward F. Wells read a paper on "Locomotor Ataxia," which was discussed by Drs.

Harold N. Moyer,
Hugh T. Patrick,
L. Harrison Mettler,
Edward F. Wells.

Dr. William F. Belfield read a paper entitled "Suprapubic Versus Perineal Prostatectomy," which was discussed by Drs.

Alexander Hugh Ferguson,
Weller Van Hook,
E. Wyllys Andrews,
F. Kreissl,
A. E. Halstead,
Edward F. Wells,
Gustav Kolischer,
William Fuller,
Wm. T. Belfield.

Adjourned..

Losing Strength.

"An' how's yer wife, Pat?"

"Sure, she do be awful sick."

"Is ut dangerous she is?"

"No, she's too weak t' be dangerous any more!"—Cleveland Leader.

The Way with Some Men.

"Sousebury's physician told him to go in for more athletics."

"And is he going to do it?"

"Sure. He's bought a golf stick and six cases of Scotch whisky."—Houston Chronicle.

One Economy.

"Old Jones must be rich. Three of his daughters have had the operation for appendicitis."

"O, I don't know! It doesn't require any clothes."—Life.

The New Regime.

Dr. Lubig had passed on, and many of his patients were employing Dr. Pond. A little girl who had a good many brothers and sisters proudly announced to a neighbor:

"We have a new baby at our house."

"A new baby!" said the neighbor. "Where did you get it?"

"Well, we used to take from Dr. Lubig; now we take from Dr. Pond."—Life.

Generally.

"Funny thing about these fellows who get rich."

"How, funny?"

"Why, you'll generally find that the man who accumulates a great many bones has a skeleton in his closet."—Houston Post.

Holding Out No False Hopes.

The druggist had gone to the back part of the store to answer a telephone call, leaving his ten-year-old boy temporarily in charge.

Yang Pim, the Chinese laundryman in the next block, came in at this moment to buy a bottle of blood purifier.

"Yes, we've got some," said the conscientious boy, "but I don't believe it'll do you any good. You might take a dozen bottles of it, and you'd still be a Chinaman."—Chicago Tribune.

Sterilized Matrimony.

"Mabel."

"Yes, Harold."

"Mabel, there is something I have wanted to say to you for a long time."

"I'm listening."

"Have you ever had insanity in your family."

"No."

"Have any of your people died of tuberculosis?"

"No."

"Here is a physician's certificate that I'm all right. Mabel, will you be mine?"—Newark News.

Applies to Some Members of the Medical Profession.

Some men are hammers and they fall
With swift, relentless shock.
This life for them is, after all,
One grand, persistent knock.

And some are anvils standing there,
In undismayed repose.
Firm placed and solid, they must bear
The impact of the blows.

The hammer has its work to do.
The anvil may not yield
In opposition. 'Twixt the two
The world's work is revealed.

—Washington Star.

THE USE OF CYSTOGEN

IN

Cystitis & Pyelitis

has become the recognized treatment of a large proportion of the American Genito-Urinary Specialists. It impregnates the urine with formaldehyde; washes the Genito-Urinary tract from the glomerulus of the kidney to the meatus urinarius with this germicidal solution. Its influence will be seen in the rapidity with which it neutralizes ammonia, destroys putridity, and clears the urine of the tenacious mucus so prevalent in bladder troubles of the aged.

Samples on application to

CYSTOGEN CHEMICAL COMPANY
ST. LOUIS, MO.

COMMERCIAL FORMS:

Cystogen—Crystalline Powder.
Cystogen—5-grain Tablets.
Cystogen-Lithia (Effervescent Tablets).
Cystogen Aperient (Granular Effervescent Salt) with Sodium Phosphate.)

THE STORK JURY'S VERDICT
We the Jury Find that
HIGHLAND BRAND
EVAPORATED CREAM
Is simply high quality cow's milk, its bulk reduced two and one-half times, and sterilized. That for
INFANT FEEDING
It is much superior to ordinary cow's milk, the casein is more easily digested, the quality is uniform, and it is germ free.
Helvetia Milk Condensing Co.
HIGHLAND, ILL.
SAMPLES ON REQUEST.

The Illinois Medical Journal.

EDITORIAL OFFICE, 522 CAPITOL AVENUE, SPRINGFIELD.
Copy for advertisements must reach the editor's office by the 20th of the month in order to secure insertion.

PUBLISHER'S NOTES.

The Journal is not responsible for any medical or therapeutical views expressed in this department.

JOSEPH C. HANCE.

Joseph C. Hance died at his country home, Weldon, Montgomery County, Pennsylvania, 5:30 a. m., Monday, November 13, 1905, ten days after being stricken by paralysis, from which he never regained full consciousness.

Mr. Hance was a member of the old firm of Hance Brothers & White, Pharmaceutical Chemists, Philadelphia. He joined his brother in the business in early manhod and always commanded the esteem of the correspondents of the house. He was a man of retiring disposition, whose general condition of health prevented him from taking part in public affairs, although earnestly interested in all that promised for the good of the community.

A man of generous impulses, he endeared himself to those who came to know him intimately.

For a number of years he has been a Director in the Consolidation National Bank, and was a member of the Art Club, Pennsylvania Historical Society, Franklin Institute, Manufacturers' Club and Huntingdon Valley Country Club.

He is survived by a widow and one daughter, wife of Prof. Blake of Lehigh University.

His funeral took place from his Weldon home.

Up-to-Date Setting and Treatment of Fracturse.

Philomath, Ore., Oct. 30, 1905.

Ambulatory Pneumatic Splint Mfg. Co.,
Chicago, Illinois.

Gentlemen: I have purchased one of your splints as a result of seeing one demonstrated at the A. M. A. Portland meeting. It is a rather peculiar and interesting case and will do much for the reputation of the splint in this part. I am anxious to do all I can for the man, who is 76 years old. He is here on a visit from Nebraska and the first day he got here, he fell from a height of 25 feet and fractured the left femur, just below the trochanter and being a little above the perineum, it was very hard to hold in place. But with Buck's extension and co-aptation splint, we held it pretty well for 6 weeks, when his general health became so bad, that we had to get him out of bed and union was so slight that with the best we could do, the leg shortened and there was outward bowing. After getting your splint adjusted to the leg with a co-aptation splint, we could get him on his feet for a few minutes every day, several times and he now rests contented and sleeps good at night. The bones are kept in perfect apposition and I am convinced that if there is any chance for union, we will get it. We could never have gotten union without deformity with any other treatment. One of the points of the splint is its adjustability to all persons. This man is 6 feet 4 inches tall and the apparatus fits him perfectly.

Yours truly,
C. H. Newth, M. D.

Pure Milk for Infant Feeding.

The highest authorities agree that the best artificial food for a healthy infant is pure milk, from healthy cows, properly diluted, sweetened, sweetened and sterilized. Milk of this description differs but slightly in its chemical composition from mothers' milk, and comes closer to an ideal food in every respect than any compound ever made. One of its essential features is that it contains fat which builds fat of a different and better quality than that produced by sugar or starch. Just why this should be so may not be explained, but nevertheless it seems to be the consensus of opinion of all pediatrists that this statement is true.

There is no absolutely fixed standard for the composition of either human or cows' milk, nor does it seem essential that the milk to be fed to infants be of an absolute standard, as long as its chemical composition does not deviate materially from the usually accepted standard of human milk, for the slight difference in carbohydrates may readily be corrected by addition of sugar, and experience has proven that this difference is readily overcome by the child in most instances, even if not corrected.

There is one reliable source from which a sterilized milk which meets all the requirements of the highest degree may always be obtained. This milk is supplied in concentrated form, a portion of its water having been evaporated. It is known as Highland Brand Evaporated Cream, the term "Evaporated Cream" indicating its resemblance to dairy cream in general appearance and usefulness. It is reduced in volume nearly two and one-half times. The peculiar sterilizing process is based on scientific principles, is safe, certain, exact and beneficial to the digestibility of the protein. It is absolutely perfect in every respect for infant feeding. The employment of Highland Brand Evaporated

Cream as an infant food is exceedingly simple. All that is necessary is to add thereto water, which has first been boiled together with sugar, according to the age of the infant.

THE POTENCY PERIOD OF DIPHTHERIC ANTITOXIN.

One of the empirical beliefs concerning curative serums was that the "life" or "keeping quality" of the antitoxin of diphtheria was of short duration. A demand for "fresh" serum has arisen in consequence, and the misconception has gone so far that many physicians have refused to use an old serum, or one on which the arbitrarily-set time-limit of the manufacturers has expired. This practice is erroneous, and the theoretical ground upon which it is based is fallacious. Incontrovertible proof of this is afforded by the results of careful and prolonged investigations ad the testimony of numerous competent authorities is adducible.

As far back as 1898, Abba, Director of the Municipal Hygienic Institute of Turin, reported experiments to show that antidiphtheric serum retained its potency unimpaired at least eighteen months after preparation. In 1900 McFarland recorded an essentially similar opinion, extending the period of undiminished potency to two years. Chiadini, in 1902, published experimental evidence to show that the antitoxin kept well for at least eighteen months an dbegan to deteriorate a little at the end of two years. A censure being attached to a certain sample of diphtheric antitoxin prepared in the Pasteur Institute because of its alleged deterioration, Roux announced (1902) that preference was given in the Institute to old serums. At this time also Libbertz had occasion to reply to a criticism directed against a ten-month-old serum, and stated that while serums do diminish in antitoxic value, the loss occurs in the first two or three months, and beyond this they can be kept for years without further impairment.

Recently this vitally important problem has been attacked anew with the opportunity afforded by longer intervals since the serums have been procured, and with more uniform methods of testing and retesting. Testimony in favor of the remarkable stability of diphtheric antitoxin is elicited to sustain the views of the earlier investigators. Thus Marx, of the Royal Institute of Experimental Therapy in Frankfort, in which the governmental examination for the German Empire i sconducted, after an exhaustive study of 1138 lots of antitoxin, publishes his observations in the Festschrift in honor of Robert Koch's sixtieth birthday. He shows conclusively that the majority of serums suffer no antitoxic depreciation even after a lapse of two to five years. The maximum loss of the occasional serum is 33 1-3 per cent, and this diminution usually occurs soon after the serum is obtained from the horse. Marx makes this significant statement in concluding his report—**Any mistrust of old serums is unfounded.** American serums have been studied by Miller, who tested many samples returned from the market. His results coincide essentially with those obtained by Marx, and he concludes that **The demand for fresh serum is not justified,** and urges that no physician should postpone the treatment of a case of diphtheria awaiting fresh serum, simply because the time-limit on that in hand has expired.

With this array of competent scientific authority, and after a series of confirmatory experiments in our biologic laboratories, we have reached the conviction that the arbitrarily-set time-limit of one year can be safely extended. We have accepted the guidance of facts ascertained b yexact scientific research which disprove obsolete traditions, and which should serve to correct erroneous practices. We bring this testimony to the physician in the conviction that he can without jeopardy to himself or his patient follow its dictates.

Frederick Stearns & Co.,
Dertoit, Mich.

THE IDEAL VIBRATORY MOTOR

MOST POPULAR and Effective form of the new European Vibratory Treatment.

By far the **most powerful** and **most substantially built** of all the

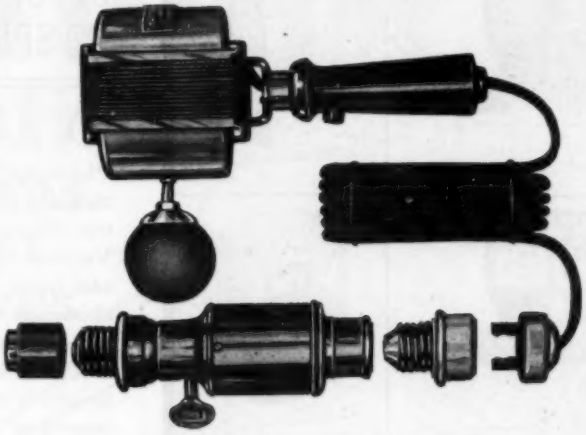
Portable Vibratory Motors

on the market.

No Commutator,
No Brushes,
No Revolving Shaft,
No Flexible Shaft,
No Oiling,
No Vibrating Contact
No Other Weak Spots

Write for Prices
Bulletin upon request

DO YOU REALIZE—The Real Curative Value of High Frequency Vibration?



ALTERNATING 60-CY., OR DIRECT CURRENT.

FOR SALE BY

R. HAAS ELECTRIC AND MFG. CO.

SPRINGFIELD, ILL.

Positively Invaluable for Physicians

Motor weighs 2¾ lbs. Velocity 14,400 strokes or movements per minute.

Numerous forms of Vibratode Attachments.

Power of stroke Adjustable at will by a separate Electric Regulator.

ABSOLUTELY GUARANTEED

Our Band Type Tissue Oscillator is the **most effective** device for applying vibration so far produced.

Write for Prices
Forwarded upon trial

THIS IS AN AGE OF SPECIALISTS AND SPECIALITIES

OUR SPECIALTY is the manufacture of Physicians' Vehicles. The cuts shown portray one of our Winter and Summer Vehicles in both the closed and open forms, and also show how our patent doors clear wheels and shafts. We build all kinds of Physicians' Vehicles. Our new catalogue will be mailed upon request.

HEINZELMAN BROS CARRIAGE CO., BELLEVILLE, ILL.

GOLD MEDAL AT WORLD'S FAIR, ST. LOUIS

MORPHINE
OPIUM
WHISKEY

AND ALL SIMILAR DISEASES

ANTI-NARCOTIN SANITARIUM

G. H. ROOSE, Mgr.

603 North Garrison Avenue, ST. LOUIS, MO.
N. W. Cor. Washington and Garrison Aves.

An Ethical Institution working in perfect harmony with the medical profession.

Write for booklet containing references and testimonials of several hundred physicians, business and professional men.

Our Facilities are Unexcelled.
Our References: The Medical Profession.

Notice to Illinois Embalmers.

Under the provisions of the act approved May 13, 1905, no person shall embalm, or prepare for transportation, any body dead of a contagious or infectious disease, or embalm any dead body, or hold himself out as a practicing the art of embalming unless he holds a license from the State Board of Health authorizing him to do so.

The State Board of Health will hold examinations for embalmers at the Metropolitan Building, Missouri Avenue and 5th Street, East St. Louis, on Friday, October 27, 1905, and at the Great Northern Hotel, Chicago, on Thursday, December 7, 1905. No person will be admitted to these examinations unless he has made application on blank forms prescribed by the State Board of Health within the time specified by the Board. Blank forms and further information will be furnished on application to the Secretary of the State Board of Health at Springfield.

After January 1, 1906, no transportation company operating in the State of Illinois will accept a body dead of any contagious or infectious disease, unless it has been prepared by an embalmer holding a license issued by the State Board of Health.

After January 1, 1906, any person who shall embalm, or prepare for transportation, any body dead of a contagious or infectious disease, or embalm any body or hold himself out as practicing the art of embalming without having obtained a license from the State Board of Health, shall be deemed guilty of a misdemeanor.

By order of the Illinois State Board of Health.

JAMES A. EGAN, M. D.,
Secretary.

Springfield, October 1, 1905.

Mulford's

Antitoxin

"Saves Most Lives"

We originated the Syringe Package

EVERY DOSE FURNISHED IN AN

Aseptic Glass Syringe

READY FOR INSTANT USE

THE barrel of the syringe contains the Antitoxin. All possibility of infection through an imperfectly-sterilized syringe is eliminated and all uncertainty in the working of the ordinary piston syringe is overcome.

Mulford's serum-syringe is used as indicated in the illustration. The rubber plug not only serves to retain the serum in the barrel of the syringe but also acts as a washer when the plunger is pressed against it to expel the Antitoxin. Rubber is used for making the plug for the same reason that the exacting surgeon uses rubber gloves—to insure absolute asepsis.

Mulford's serum-syringe is supplied with finger-rests that permit injecting the serum with one hand, allowing the use of a free hand for controlling the patient.

The sterile rubber tube is used for connecting the needle to the syringe to prevent tearing the flesh of the patient or breaking the point of the syringe should the patient struggle during the injection of the serum.

The entire package, with needle and plunger, is carefully sterilized in the laboratory before the syringe is filled.

At every stage in the preparation and administration of Mulford's Antitoxin is perfect asepsis insured. Air never comes in contact with the serum. Contamination is prevented; injection of air is impossible.

Report from the Minneapolis City Hospital

"We have had during the year (ending December 31st) 179 cases of diphtheria with two deaths, these being in a moribund condition when brought in the hospital. Such results have been obtained by a very liberal use of Antitoxin.

"We believe it is economy to be liberal in the use of Antitoxin, as the disease is thereby shortened—the saving of life is, however, the best reason."

In this series of cases Mulford's Antitoxin was Used Exclusively

Literature Upon Request

H. K. MULFORD COMPANY, Philadelphia

Mulford's Antitoxin Always Exchangeable. Prevents an uncertain or out-dated serum being used; ensures a reliable product.

HEMATONE

A PERFECT BLOOD AND NERVE FOOD

A PERFECT BLOOD AND NERVE FOOD composed of Glycerino-Phosphate of Calcium, Hydrastis, Nux Vomica, Hemogallol, Hypophosphites and Cell Tissue Salts. A NERVE NUTRIENT and BLOOD BUILDER tolerated in the most sensitive and assimilated by the most apathetic cases, whether Anemic, Chlorotic or Neurasthenic. Beneficial in DEBILITY of all forms and in CONVALESCENCE. A blood examination demonstrates the prompt action of Hematone in increasing the number of red blood corpuscles. Clinical test samples upon application.

DIASTALIN

(TRADE MARK)

5 GRAIN TABLETS.

A Digestive Agent composed of Pepsin, Caroid, Pancreatin, Diastase, Nux Vomica, Bismuth Subgallate, Willow Charcoal and Lactic and Hydrochloric Acids. Recommended in all cases of Indigestion of a stubborn, intractable, unyielding character, particularly those unaffected by the administration of other remedies. Samples for clinical test sent upon application.

ZEMATOL

TRADE MARK

THE CURE FOR ECZEMA

FORMULA.—Oil Betula, Russian; Potassium Sanmlodolate; Zinc Oxide, C. P.; Mercury Napthotate; Ichthyol; Gallanol. This remedy has achieved remarkable results in the treatment of various Ichinr, Scaly and Eruptive Skin Diseases. Samples for trial submitted upon application.

CLARK'S HEPATIC PILLS

FORMULA.—Irisin, 1-8 grain; Podophyllin, 1-8 grain; Ext. Chionanthus, 1-8 grain; Ext. Belladonna, 1-8 grain; Strychnia, 1-100 grain; Cascarin, 1-4 grain; Oleoresin Capsicum, 1-120 grain.

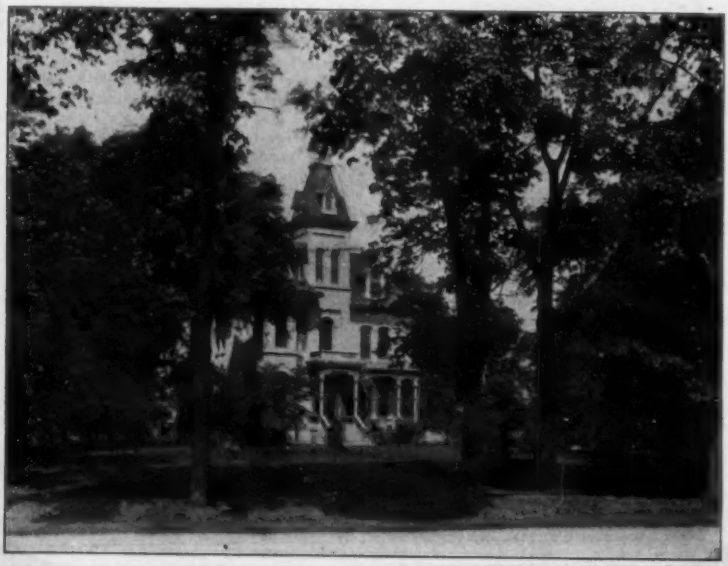
Do not gripe, distress, or nauseate. One pill is usually sufficient for laxative effect. Catharsis results from increased dosage. Their continued use is productive of curative results in acute and chronic constipation of various forms particularly those dependent on bilious derangement. Samples mailed free upon application.

Our preparations may be obtained direct from us or through any jobber in Chicago. Our Catalogue and price list of Plain, Chocolate and Sugar-Coated Compressed Tablets, Tablet Triturates, Hypodermic Tablets, Specific Tinctures, Elixirs, Syrups, Wines, Suppositories, Ointments and Specialties mailed upon application. Private formula work a specialty.

CHICAGO PHARMACAL CO., 141 Kinzie St., CHICAGO.

DR. BROUGHTON'S SANITARIUM.

For the care of Special Nervous Cases, Opium, other Drug Addictions including Alcoholic.



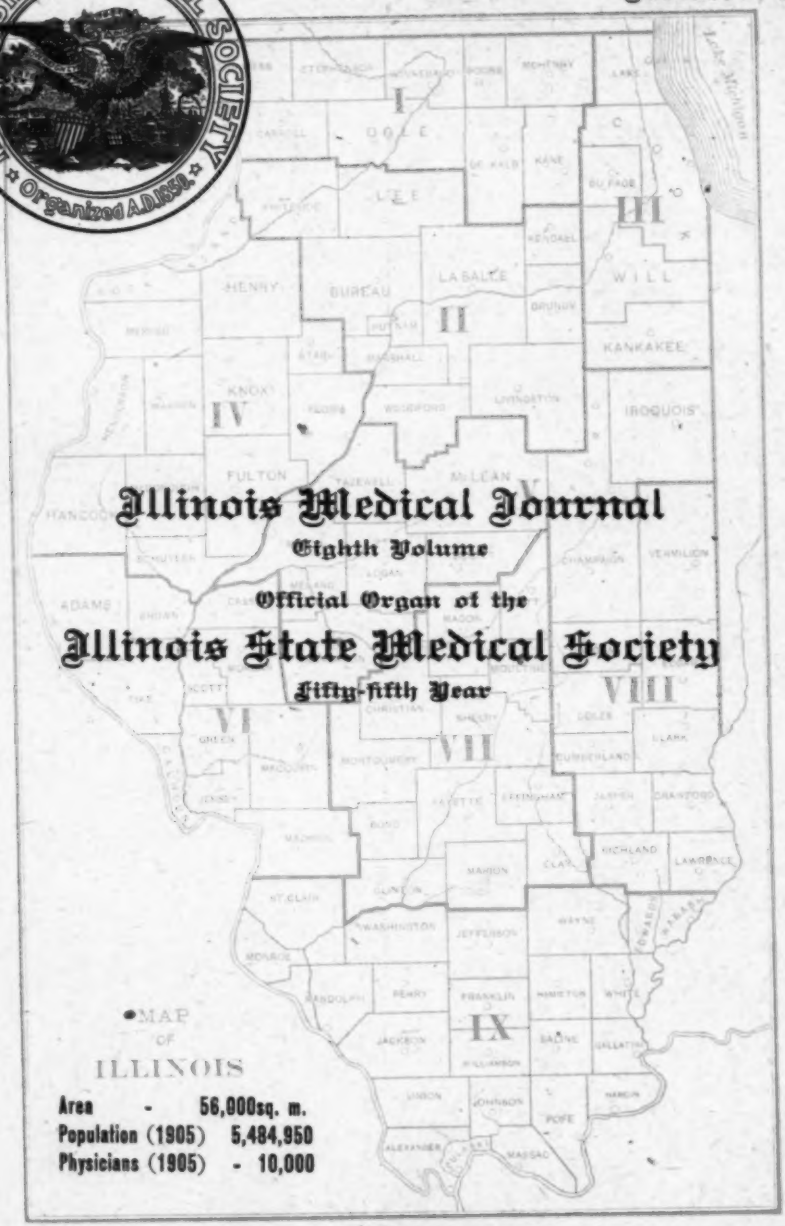
Address, R. BROUGHTON, M. D., 2007 South Main St., Rockford, Ill. Phone 536.

536.

GENERAL LIBRARY,
UNIV. OF MICH.
DEC 30 1905

2799

December 1905



Illinois Medical Journal

Eighth Volume

Official Organ of the

Illinois State Medical Society

Fifty-fifth Year

MAP OF ILLINOIS

Area - 56,000sq. m.
Population (1905) 5,484,950
Physicians (1905) - 10,000

MEMBERSHIP

Cook County (Chicago) Medical Society, -	1512
99 County and 10 District Societies, -	3070
Grand Total, - -	4582

WHETHER YOU PRESCRIBE OR DISPENSE SPECIFY

URISEPTIN

URISEPTIN TREATMENT is SUCCESSFUL TREATMENT.

Liberates formaldehyde in the kidneys.
Makes alkaline urine acid.
Makes the urine antiseptic.
Clears turbid urine by killing bacteria.
Keeps the urinary tract aseptic.

Therefore indicated in CYSTITIS, PYELITIS, NEPHRITIS, PROSTATITIS, BACTERIURIA, GOUT and RHEUMATISM.

DOSE—Tablespoonful night and morning in plenty of hot water.

Full information furnished physicians on request, or 8-oz. bottle will be sent on receipt of 25 cents.

GARDNER-BARADA CHEMICAL CO. CHICAGO. U.S.A.

"BEVERLY FARM"

HOME AND SCHOOL FOR NERVOUS AND BACKWARD CHILDREN AND ADULTS

A brick schoolhouse and gymnasium built this summer enables acceptance of a few more selected cases. Location ideal, in midst of 135 acres. Individual school work and habit training. Separate buildings for boys, girls and children under 10 years of age. Consultation held at home if desired. Undue publicity avoided.

Address all communications to

W. H. C. SMITH, M. D., Supt. Godfrey, Madison Co., Ill.

DR. SMITH CAN BE INTERVIEWED

In charge of Exhibit of American Institutions for the Feeble Minded, Social Economy Department, Section 5, Education Building, Monday and Thursday Afternoons during the World's Fair.

Telephone: Central 2523.

William Whitford

MEDICAL

STENOGRAPHER

103 State St., - - Chicago

Official Stenographer American Medical Association Proceedings of State and other Medical Societies reported. Manuscripts edited and typewritten for country and city physicians.

Chicago Policlinic

PIONEER POST-GRADUATE SCHOOL OF THE WEST.

Splendid Hospital faculties, large clinics and well-equipped pathological Laboratories, afford the practitioner every opportunity for practical work in every branch of medicine and surgery.

Anatomical and Operative Courses upon the Cadaver are conducted by Prof. Paul Gronnerud, for many years in in charge of Turck's Laboratory, this city.

For schedule and program address,

M. L. HARRIS, M. D., Secretary

174-176 East Chicago Avenue

CHICAGO, ILLINOIS

Wide clinical experience at home and abroad has proven PANOPEPTON to possess peculiar potency as a restorative, nutritive and stimulant.

PANOPEPTON

has proven a dependable recourse in critical straits, and the more urgent the need the more evident are its really marvellous properties as a food, especially designed and adapted for the feeding of the sick in a wide range of conditions.

FAIRCHILD BROS. & FOSTER
Yew York

Literature with composition, method of manufacture and clinical reports upon request.

ILLINOIS Medical Journal

The Official Organ of the State Medical Society.

Monthly Under Direction of the Judicial Council.

Entered in the Springfield Postoffice as Second-Class Matter. Printed by THE ILLINOIS STATE JOURNAL CO., Springfield.

Volume VIII. Number 6. | Springfield, Ill., December, 1905. | Subscription, $2 a Year. Single Copies, 25 Cents.

TABLE OF CONTENTS.

ORIGINAL ARTICLES.

Should the Physician Send His Tuberculosis Patients to Colorado?. W. H. Watterson, M. D., Fox Lake, Wis..... 459

Crushing Injury of Arm Without Fracture of Humerus—Permanent Obliteration of Brachial Artery—Musculospiral Paralysis and Extension Appartus for Same. Geo. Tarnowsky, M. D., Chicago..... 460

1. A Case of Stricture of the Esophagus, Following Typhoid Fever. S. C. Plummer, M. D., Chicago..... 463

2. Case of Colloid Carcimona of the Cecum. S. C. Plummer, M. D., Chicago..... 464

Immediate Diagnosis and Treatment of Lacerations of the Vagina, Pelvic Floor and Perineum. C. S. Bacon, M. D., Chicago 465

The Causes of Tuberculosis in the Stock Yards District. Caroline Hedger, M. D., and Elizabeth Jones, Chicago..... 471

The Tuberculosis Problem in Illinois. Homer M. Thomas, A. M., M. D., Chicago 474

Mixed or Secondary Infection—With Some Consideration as to Treatment. Ethan A. Gray, M. D., Chicago..... 478

Entero-colitis. H. J. Nichols, M. D., Quincy. 484

The Secret Nostrum Evil. Frank Billings, M. D., Chicago 486

Injection of Air Into the Circulatory System of Animals. Ezra Read Larned, M. D., Chicago 490

The Efficiency of Salicylate of Sodium in Inflammatory Eye Disease. H. Gradle, M. D., Chicago 497

Further Observations on the Use of the Soft-Point Bullet. Howard Crutcher, M. D., Chicago 499

Diagnosis and Treatment of Rupture of the Uterus. Geo. Schmauch, M. D., Chicago 500

Some Eye Problems the General Practitioner is Called Upon to Solve. Richard J. Tivnen, M. D., Chicago..... 511

Treatment of Actinomycosis and Blastomycosis with Copper Salts. Arthur Dean Bevan, M. D., Chicago 514

Septic Infections About the Rectum. Chas. J. Drueck, M. D., Chicago..... 516

Acute Urinary Retention—Its Treatment, Medical and Surgical. Victor D. Lespinasse, M. D..... 524

The X-Rays in Medicine and Surgery.... 527

EDITORIAL.

Present Army Medical Service a Humiliating Failure 531

Nicholas Senn Honored 531

Wise Comments from Kansas..... 532

Medical Laws and Society Dues in Idaho... 532

Success of the Lewis and Clark Fair Largely Due to Visiting Physicians..... 532

Remarkable Decrease in the Number of Medical Students 533

LOCAL SOCIETIES.

Crawford County Medical Society..... 538

Military Tract Medical Society..... 538

Sangamon County Medical Society..... 539

Ogle County Medical Society..... 541

Wabash County Medical Society.....541

The Society of Sanitary and Moral Prophylaxis of New York City.....541

Chicago Medical Society 542

Marriages and Deaths 530

New Incorporations 530

Correspondence 534

News Items 536

Publisher's Notes 547

It is a well-known fact that milk is deficient in iron.

"Hemaboloids" supplies the very substance in which milk is so vitally deficient, i. e., the readily absorbable, iron-holding nucleo-proteid bodies of richly ferruginous vegetables. It is thus indicated in Bright's disease and other chronic conditions in which milk is depended upon as the nutritive mainstay.

Dose:—One tablespoonful 3 to 4 times a day.

The Palisade Manufacturing Co.
Yonkers, N. Y.

RUSH MEDICAL COLLEGE

IN AFFILIATION WITH

THE UNIVERSITY OF CHICAGO.

STUDENTS MAY ENTER AT THE BEGINNING OF ANY QUARTER.

Summer Quarter opens June 16th;
Autumn Quarter . October 1st;
Winter Quarter . January 1st;
Spring Quarter . . . April 1st.

Offers Special Opportunities Both for Undergraduates and Practitioners.

Courses are given in all departments of medicine. Announcement and complete information will be furnished on application. Correspondence should be addressed to

RUSH MEDICAL COLLEGE,
CHICAGO, ILL.

COLLEGE of PHYSICIANS and SURGEONS OF CHICAGO

COLLEGE OF MEDICINE OF THE UNIVERSITY OF ILLINOIS

COLLEGIATE YEAR SEPTEMBER 26TH, 1905 TO JUNE 6TH, 1906

Four years course. Students permitted to specialize in electives. Completely equipped Laboratories. Unsurpassed clinical advantages.

DR. FRANK B. EARLE, Secretary
Congress and Honore Streets . . . CHICAGO

Awarded
GOLD MEDAL
Universal Exposition
Saint Louis
1904

Listerine
Dermatic Soap

An Antiseptic Detergent for use in the Antiseptic Treatment of Diseases of the Skin.

LISTERINE "Dermatic" Soap contains the essential antiseptic constituents of eucalyptus (1%), mentha, gaultheria and thyme (ea. ½%), which enter into the composition of the well-known antiseptic preparation, Listerine, while the quality of excellence of the soap-stock employed as the vehicle for this medication, will be readily apparent when used upon the most delicate skin, and upon the scalp. Listerine "Dermatic" Soap contains no animal fats, and none but the very best vegetable oils; after its manufacture, and before it is "milled" and pressed into cakes a high percentage of an emollient oil is incorporated with the soap, and the smooth, elastic condition of the skin secured by using Listerine "Dermatic" Soap is largely due to the presence of this ingredient. Unusual care is exercised in the preparation of Listerine "Dermatic" Soap, and as the antiseptic constituents of Listerine are added to the soap after it has received its surplus of unsaponified emollient oil, they retain their peculiar antiseptic virtues and fragrance.

A sample of Listerine Dermatic Soap may be had upon application to the Manufacturers—

Lambert Pharmacal Co.
St. Louis, U. S. A.

Vitogen

ECONOMICAL

Odorless Dry Dressing

VITOGEN not only excels iodoform at every point but it also costs only one-half as much and is co veniently and economically dispensed in sprinkle-top bottles.

The Ointment Possessing Full Liniment Properties

SOLIDIFIED LINIMENT possesses surface-irritating, circulation-increasing, inflammation-drawing *liniment* properties in permanent *ointment* form.

SARATOGA Antiseptic Ointment

Consistency, appearance and therapeutic value never vary. Adaptable as an ointment, vehicle or lubricant. Refrigerant, analgesic, germicidal, healing.

THE F. HARVEY CO.

Peoria, Ill. Saratoga Springs, N. Y. Mille Roches, Ont.

S & H Quality

A Perfect

ANTITUBERCULAR and RECONSTRUCTIVE.

GUAIATONIC "S & H" combines in a most palatable form the germicides Guaiacol and Creosote with the tonics Quinine and Strychnine and the reconstructive Hypophosphites, which latter not only increase digestion and assimilation but act as foods to the nerve centers, especially by replacing the lime and phosphorus of which tubercular and similar bacilli are such voracious consumers.

Do not DISTURB DIGESTIVE FUNCTIONS.

You can give Guaiacol "ad lib" by prescribing GUAIATONIC S & H because it is agreeable, palatable and entirely acceptable to the most delicate stomachs and hence can be given for long periods without disturbing digestion. Being in the form of WATER SOLUBLE compounds the Guaiacol and Creosote are completely assimilated, thus securing the maximum amount of antiseptic and expectorant action.

LET US SEND YOU A SAMPLE.

THE SEARLE & HERETH CO.

69 to 75 Wells St.

CHICAGO.

Guaiatonic S&H

EACH FLUIDRAM CONTAINS Guaiacol 1 min. Creosote 1 min. Quinine 1-128 gr. Strychnine hypophos. 1-256 gr. united with Hypophosphites in aromatic sweet solution.

S & H Quality

Quality and Technique

Your success in the practice of medicine depends largely upon two things:—The quality of the remedial or medicinal agents used, and your ability to properly use them.

Inert agents and faulty technique will make a failure of the best of physicians. A standard article cannot build a reputation for any man unless he has the wisdom to properly use it.

When called upon to treat a Non-Suppurative Synovitis, say of the knee in an adult, prescribe the best possible remedy—

Antiphlogistine

a Medium can, and heat by placing the can in hot water. Do not delegate its application the first time to some one who has never seen the thing done, but personally apply the entire contents of the can to the affected joint, spreading it on the skin as thick as this [redacted] about the joint and beyond the boundaries of the inflammation. Cover with a liberal amount of absorbent cotton and a suitable compress. At the expiration of 24 hours, or when the dressing can be peeled off nicely, remove it and apply a new one. After a few days the affection will, as a rule, be but a memory.

You can rely upon Antiphlogistine for QUALITY,
The TECHNIQUE depends upon you.

Antiphlogistine can be obtained at its best and more economically in original packages, Small, Medium, Large, or Hospital.

The Denver Chemical Mfg. Co., New York.

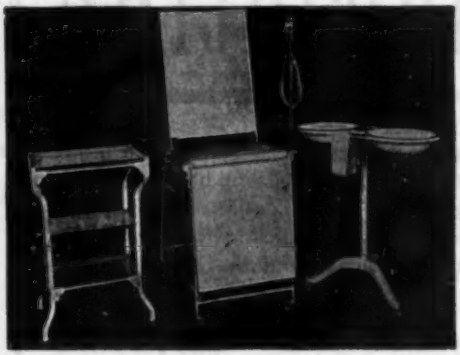
CORPORATE OFFICE:
DENVER, COLO.

BRANCHES:
LONDON, ENG.
MONTREAL, CAN.
SYDNEY, N. S. W.

FREE---Physicians Pocket Dose Book 1905 Edition.

Compiled by John Edwin Rhodes, A. M., M. D., Assistant Professor of Diseases of the Chest, Throat and Nose, Rush Medical College; Laryngologist to Cook County and St. Mary of Nazareth Hospitals and Home for Destitute Crippled Children, etc., Chicago.

There has been a large demand for this Pocket Dose Book, exhausting each edition rapidly until over twenty-five thousand have been distributed. The present edition has been carefully revised and a large number of new remedies of proved value have been incorporated in the Dose Table. A number of items for ready reference have also been added from current literature. Sent FREE upon receipt of five cents to cover postage.



SANDS' PHYSICIAN'S SPECIAL OFFICE OUTFIT PRICE COMPLETE, $25.00.

The table is constructed of iron, white enameled. It can be used as a chair for examinations or as a general operating table, giving all positions, including the Trendelenburg posture. Price complete with Stirrups, Legholders, Cushions and Percolator Rod, **$15.00.**

Price of double washstand, with revolving top and two 14 inch steel porcelain basins, mounted on casters, **$6.00.**

Price of aseptic instrument stand, with top and two shelves of heavy polished plate glass, mounted on casters, size of top 16x20 inches, size of shelves 12x16 inches, **$6.00.**

PRICE OF COMPLETE OUTFIT AS DESCRIBED ABOVE, $25.00.

SHARP & SMITH,

Manufacturers and Importers of High Grade Surgical and Veterinary Instruments and Hospital Supplies.

92 WABASH AVE., { 2 DOORS NORTH OF WASHINGTON ST., } CHICAGO, ILL.

We are the Largest Manufacturers of Surgical Elastic Goods in the United States.
Established 1844. Incorporated 1904.

For WINTER COUGHS—the stubborn kind—whether of bronchitis, phthisis or laryngitis—whether acute or chronic—whether in adults or children—the best remedy is

Angier's Petroleum Emulsion

Expectoration becomes more free, pulmonic congestion is relieved, respiration is made easier, the troublesome cough is checked and cured.

Samples only upon request. ANGIER CHEMICAL COMPANY, BOSTON, MASS.

HAGEE'S CORDIAL OF COD LIVER OIL WITH HYPOPHOSPHITES OF LIME AND SODA

has made possible the use of cod liver oil in those cases where the administration of plain cod liver oil and emulsions is repulsive to the patient. It has been used and prescribed by the medical profession for many years, which is proof of its intrinsic worth. HAGEE'S CORDIAL acts as an effective tonic stimulant in the treatment of colds, coughs, all chronic pectoral affections, phthisis, scrofula, neurasthenia, general debility, indigestion and mal-assimilation, and is especially recommended in the treatment of children's diseases, such as rachitis, general marasmus, etc. Where tonic, alterative and reconstructive treatment is indicated, discriminating physicians specify

CORD. OL. MORRHUAE COMP. (HAGEE)

FORMULA.—Each fluid ounce represents 33 per cent. pure Norwegian Cod Liver Oil with six grains Calcium Hypophosphite, three grains Sodium Hypophosphite and Aromatics.

PUT UP IN 16-OZ. BOTTLES ONLY

Katharmon Chemical Co.

ST. LOUIS, MO.

IN BULK NEVER SOLD

In cholangitis, cholecystitis, cholelithiasis

PROBILIN PILLS

(comp. salicylic and oleic acids, phenolphthalein and menthol)

Excreted by the hepatic epithelia
Thus disinfect the biliary system
Exert a powerful cholagogue action
and, by softening the stones, finally effect

Passage of the biliary concretions

In all hemorrhoidal conditions

ANUSOL SUPPOSITORIES

(Iodo-resorcin-sulphonate of bismuth

Make defecation easy and painless
Cause retrogression of the veins
Soothe the mucosal inflammation
and, under proper dietetic measures, assure

Prompt relief and permanent cure

Literature from

Schering & Glatz, New York

THE CINCINNATI SANITARIUM

A Private Hospital for Mental and Nervous Disorders, Opium Habit, Inebriety, Etc.

Thirty years successful operation. Thoroughly rebuilt, remodeled, enlarged, and refurnished. Proprietary interests strictly non-professional. One hundred and fifty patients admitted annually. Detatched appartments for nervous invalids, opium habit, inebriety, etc Location retired and salubrious. Grounds extensive. Surroundings delightful. Appliances complete. Charges reasonable. Electric cars from Fountain Square, Cincinnati, to Sanitarium entrance. LONG DISTANCE TELEPHONE PARK 135.

DR. P. W. LANGDON, *Medical Director.* DR. B. A. WILLIAMS, *Senior Resident Physician.*

For Particulars, Address, THE CINCINNATI SANITARIUM
COLLEGE HILL, STATION K, CINCINNATTI, OHIO.

Please mention the Journal when writing to advertisers. X

Illinois Central R. R.

ILLINOIS CENTRAL — MISSISSIPPI CENTRAL VALLEY ROUTE — RAILROAD

EFFICIENTLY SERVES A VAST TERRITORY

by through service to and from the following cities:

CHICAGO, ILL.	CINCINNATI, OHIO.
OMAHA, NEB.	NEW ORLEANS, LA.
COUNCIL BLUFFS, IOWA.	MEMPHIS, TENN.
MINNEAPOLIS, MINN.	HOT SPRINGS, ARK.
ST. PAUL, MINN.	LOUISVILLE, KY.
PEORIA, ILL.	NASHVILLE, TENN.
EVANSVILLE, IND.	ATLANTA, GA.
ST. LOUIS, MO.	JACKSONVILLE, FLA.

Through excursion sleeping-car service between Chicago and between Cincinnati

AND THE PACIFIC COAST.

Connections at above terminals for the

EAST, SOUTH, WEST, NORTH.

Fast and Handsomely Equipped Steam-Heated Trains—Dining Cars—Buffet-Library Cars—Sleeping Cars—Free Reclining Chair Cars.

Particulars of agents of the Illinois Central and connecting lines.

A. H. HANSON, Gen'l Pass'r Agent, CHICAGO.

A Haven of Rest

FOR

SPECIAL NERVOUS and MILD MENTAL DISEASES.

A Quiet Delightful Home, Under The Personal Care and Direction of

PENN. W. RANSOM, M. D.,
"THE SANITARIUM,"
ROCKFORD, ILL.

Arend's Kumyss

(The Original)

Twenty-five years of constant use by the Medical Profession has established "AREND'S KUMY" as the most SATISFACTORY DIET for the patient after an operation, and during fever, TYPHOID, Scarlet or Gastric, PNEUMONIA, Bright's Disease, Anemia, and DYSPEPSIA, NAUSEA during pregnancy, SUMMER COMPLAINT in children and adults.

"Arend's Champagne Kumyss"—Drawn with a Tap, qts. only, 1 doz. case and ½ doz. case.
"Arend's Double Kumyss"—No Tap required, pts. only, doz. in case.
(Shipped in case lots only.)

A. AREND DRUG CO.,
MANUFACTURING CHEMISTS,
Madison St., Cor. Fifth Ave.,
Telephone Main 3506. CHICAGO.

A NO. 0 DOUCHE FOR THE APPLICATION OF GLYCO-THYMOLINE TO THE NASAL CAVITIES

GLYCO-THYMOLINE

FOR

CATARRHAL CONDITIONS

Nasal, Throat
Intestinal
Stomach, Rectal
and Utero-Vaginal

KRESS & OWEN COMPANY
210 FULTON STREET NEW YORK

THE MILWAUKEE SANITARIUM

(Established in 1884.)

WAUWATOSA, WIS.

FOR NERVOUS AND MENTAL DISEASES.

Wauwatosa is a suburb of Milwaukee on the Chicago, Milwaukee and St. Paul Railway, 2½ hours from Chicago, 5 minutes' walk from all cars and trains.

Physician in charge: RICHARD DEWEY, A. M., M. D.

CHICAGO OFFICE: 34 Washington St., Wednesday, 2 to 4 o'clock, (except in July and August). Telephone connections, Chicago and Milwaukee.

R. N. DODDS

DRUGGIST

5TH AND MONROE STREETS, SPRINGFIELD, ILL.

Surgical Instruments, Surgeons' Supplies, Trusses Crutches, Fever Thermometers, Hypodermic Syringes, Abdominal Supporters, Antitoxin, Vaccine Virus.

We Guarantee Quality and Prices of All Goods. Telephone 839.

The Illinois State Journal Company

ESTABLISHED 1851

PRINTERS OF THE

ILLINOIS MEDICAL JOURNAL

GENERAL JOB PRINTERS AND BINDERS

PHYSICIANS

Having papers in the Medical Journal may have

Reprints in Pamphlet Form

at Reasonable Prices on sending notice in advance

ADDRESS COMMUNICATIONS

Illinois State Journal Co.

313 and 315 South 6th Street

SPRINGFIELD ILLINOIS

Adolph Gehrmann, M. D. W. A. Evans, M. S., M. D.
J. A. Wesener, Ph. C., M. D.

Columbus Medical Laboratory

A Laboratory for Physicians. Chemic, Microscopic and Bacteriologic Examinations. Courses in Laboratory Instruction. Investigation of Sanitary and Medico-Legal Questions. Disinfection of Houses and Apartments. Fee table on application.

Suite 1402, 103 State Street, Columbus Memorial Building, - - Chicago

TELEPHONE: CENTRAL 2140
Affiliated with Columbus Food Laboratory.

THE ILLINOIS MEDICAL COLLEGE.

Departments of Medicine and Pharmacy.

HEMAN H. BROWN, M. D., President. B. BRINDLEY EADS, M. D., Dean.

The Academic year is divided into 3 terms of 4 months each. Beginning Sept. Jan. and May. Course consists of 4 years; minimum attendance each year 7 months.

For Catalogue Address,
W. C. SANFORD, M. D., Secretary,
182-184 Washington Blvd., CHICAGO.

KENILWORTH SANITARIUM

KENILWORTH, ILLINOIS

(C. & N.-W. RAILWAY, SIX MILES NORTH OF CHICAGO)

Built and equipped for the treatment of Nervous and Mental Diseases.
Approved Diagnostic and Therapeutic Methods. Elegant appointments.
Special System of Ventilation. Rooms Impervious to Noise.
Private Bath Rooms, Steam Heating and Electric Lighting.

TEN ACRES OF GROUND--RURAL QUIETUDE

SANGER BROWN
PHYSICIAN IN CHARGE

100 STATE STREET, CHICAGO
and KENILWORTH, ILLINOIS

N. B.—Dr. Sanger Brown begs to announce that, though his residence is at the Kenilworth Sanitarium, he will continue his practice at 100 State Street, as formerly.

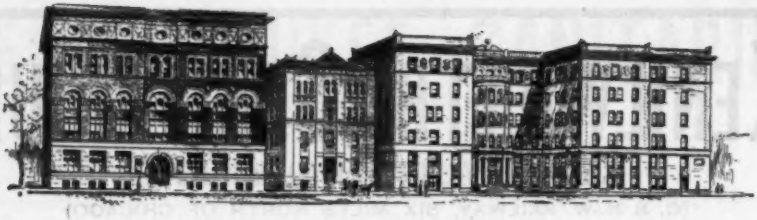
When advising a mother to use Mellin's Food for her baby, it is a good plan to give her a sample at the same time.

While your instructions are fresh in her mind, she is more likely to prepare it just as you have instructed.

Write us for samples when you need them. They will be sent to you free.

Mellin's Food Co., **Boston, Mass.**

Mellin's Food is the ONLY Infants' Food, which received the Grand Prize, the highest award of the St. Louis Exposition, 1904. Higher than a gold medal.



Northwestern University Medical School.

(CHICAGO MEDICAL COLLEGE.)

This school has been a leader in advanced standards and methods of teaching for fifty years.

The plant is new, modern and complete.

The Dispensary treats 25,000 cases annually.

The new Wesley Hospital adjoins the college buildings.

Upon its completion the school will control over 500 beds for its own students exclusively.

For circulars and further information address the Secretary.

ARTHUR R. EDWARDS, M. D.,

2431 Dearborn Street, CHICAGO.

St. Louis University-Medical Department Marion-Sims-Beaumont College of Medicine

ST. LOUIS, MO.

Offers a course in **Medicine**, consisting of **Laboratory, Didactic, Clinical and Sectional Instruction, Exercises, Demonstrations and Elective Work,** in this way meeting the highest modern requirement of medical instruction.

Abundant clinical material is afforded by two large general dispensaries, obstetric dispensary, and nine hospitals with a capacity of 1,000 beds under the exclusive direction of members of the Faculty in addition to the city institutions.

The work of the first two years in **Anatomy, Physiology, Histology, Embryology, Chemistry, Pharmacology and Physiological Chemistry, Pathology and Bacteriology** has been placed upon a university basis. The instructors holding chairs in these departments devote their entire time to teaching and research.

For Catalogue and information address,

H. W. LOEB, Secretary. **Y. H. BOND, Dean.**

Grand Avenue and Caroline Street, St. Louis, Mo.

A POST GRADUATE COURSE

ALKALOMETRY IN A NUT-SHELL

Including Theory and Practice Text-Books and Tools.

THE ALKALOIDAL CLINIC

One of the best medical journals in the world--others say so, too. It is chock full of genuine helpfulness for the doctor. A Post-Graduate Course every month. $1.00 per year, 12 copies--money back if not satisfied.

THE BEST VALUE EVER OFFERED FOR THE MONEY.

Just send $1.00 for the CLINIC one year, and we will send you this substantial pocket case filled with your selection from the following list of standard alkaloidal granules and tablets, a pocket therapeutics ("Abbott's Alkaloidal Digest,") giving dose, indications, etc., and a complete therapeutic price list of our alkaloidal line. **Make it $1.50** and we'll send a twelve-vial case, adding any three you specify, or we will add those marked "†". We will fill the case with tablets or granules, as you prefer, but if no choice is made, part of each will be sent. Our 9-vial selection marked *. If you want your name on the case in gold, say so and add 15c.

1 *Aconitine, gr. 1-134
2 Digitalin, gr. 1-67
3 *Hyoscyamine, gr. 1-250
4 †Codeine, gr. 1-67
5 †Podophyllin, gr. 1-6
6 *Strych. Arsenate, gr. 1-134
7 Copper Arsenite, gr. 1-1000
8 Quinine Arsenate, gr. 1-67
9 *Glonoin (Nit. Glyc.), gr. 1-250
10 Aloin, gr. 1-12
11 Acid Arsenous, gr. 1-67
12 Atropine Sulph., gr. 1-500
13 Brucine, gr. 1-134
14 *Calcium Sulph., gr. 1-6
15 *Calomel, gr. 1-6
16 Camphor Mono-brom, gr. 1-5
17 *Colchicine, gr. 1-134
18 Emetine, gr. 1-67
19 Ergotin, gr. 1-6
20 Lithium Benzoate, gr. 1-6
21 *Morphine Sulph., gr. 1-12
22 Quassin, gr. 1-67
23 Veratrine, gr. 1-134
24 †Zinc Sulphocarbolate, gr. 1-6
25 Anticonstipation (Waugh's)
26 *Anodyne for Infants
27 Caffeine, gr. 1-67
28 Cicutine, gr. 1-134
29 Mercury Protolodide, gr. 1-6
30 Iron Arsenate, gr. 1-67

THE CLINIC IS WORTH THE PRICE

Not only is the CLINIC worth the price many times over, but with the premium case and "Digest" added it becomes a veritable bargain and both together will enable you to test ALKALOMETRY to perfection. If you are an old subscriber, and want a new, fresh case, send with your renewal the name (and a dollar) of a new subscriber, —or 25c each for 4 or more 3-months trial subscribers and the thing is done. This is a good way for our old friends to reciprocate. **We are pulling hard for you and we ask you to lend a hand.**

Shaller's Guide at $1.00 is a choice little book you will profit by, and we advise that you include it also.

The Clinic Publishing Co.
RAVENSWOOD STATION, CHICAGO.

Enclosed find $ _____ for which you will please enter my name as a subscriber to THE ALKALOIDAL CLINIC *(subscription price $1.00 per year), and send me your _____ vial "Premium Case," filled as selected above Also _____ for which I enclose $_____ additional.*

(The CLINIC for four years for three dollars if you say so.)

DR._____

TOWN_____ STATE_____

Always money back if not satisfied.

STEARNS' ANTITOXIN

IS MOST ECONOMICAL

Take the 3000 unit package as a basis for comparison.

You can buy 3000 units of Stearns' diphtheric antitoxin at drug stores for $3. It costs as much as any to produce; it is put up in the simplest, strongest, handiest syringe; but it is sold for less than others because it is not exchangeable.

All you pay over $3 for 3000 units of exchangeable serum is your tax for the exchange "privilege": for $3 pays for the serum you get, and the $1.50 or $2 additional is for the wasted serum that someone else has returned.

Is the "privilege" of occasionally returning an old package worth the (approximately) 50 per cent extra cost? Suppose you buy 12 packages, pay $18 more for them than Stearns' would have cost, and have one left that you don't need: the "privilege" of exchanging it has cost you $18—rather an expensive "protection against loss!"

Therefore, if you expect to return the serum, get an exchangeable kind. But if you expect to use it, buy Stearns'.

Our splendidly equipped laboratories are operated by scientific experts under Federal authority and inspection.

Our serums are guaranteed pure and sterile, and to retain their full activity, as labeled, at least 18 months: this time limit is sanctioned by the highest scientific authority.

THERE IS EVERY REASON FOR PREFERRING STEARNS' SERUMS

50 YEARS IN BUSINESS

FREDERICK STEARNS & CO.

STEARNS QUALITY

DETROIT, MICH. U. S. A.

WINDSOR, ONT.-LONDON, ENG.-NEW YORK CITY.

Great Cities Served By a Great Railway

"THE ROCK ISLAND serves more cities* of 25,000 people than *any other Western Road*—this gives it an urban standing. The Rock Island System may be said to constitute with its territory a railroad principality, and one which approaches somewhat the industrial independence claimed for the nation."

From "The Strategy of Great Railroads," by F. H. Spearman.

***Here are some of the cities:**

CHICAGO	ST. LOUIS	ST. PAUL
DES MOINES	KANSAS CITY	MINNEAPOLIS
OMAHA	TOPEKA	MEMPHIS
LINCOLN	WICHITA	FT. WORTH
DENVER	COLO. SPRINGS	EL PASO

Rock Island service is the kind that gratifies—the kind that leaves a pleasant impression with the traveler.

Thousands of dollars have recently been spent for new equipment. The Rock Island is determined to maintain its service at the highest standard of excellence.

Rock Island System

Folder and any information promptly on request.

Address any agent or representative, or

JOHN SEBASTIAN,
Passenger Traffic Manag'r,
CHICAGO

DOCTOR!

Do you know that most patients with **fracture of the hip, thigh or leg; knee or hip-joint disease,** would be only too glad to avail themselves of the **comforts, benefits and good rest** from the use of the

AMBULATORY PNEUMATIC SPLINT

Either on a PURCHASE OR RENTAL BASIS if they but knew of it. Recommended and used by the best surgeons. WHY DON'T YOU FOR THAT CASE YOU HAVE? We guarantee satisfaction. Write for booklet, prices, etc., NOW. Prompt attention to wire orders. All dealers.

Ambulatory Pneumatic Splint Mfg Co.
163 Randolph St., CHICAGO

HUGO AD. OLDENBURG, G. D.

SWEDISH
THERAPEUTIC GYMNASTICS AND
MASSAGE.

TELEPHONES { CENTRAL 3173 / AUTO 8485 } 1209 Stewart Bldg. 92 State Street.
CHICAGO.

WAUKESHA SPRINGS SANITARIUM

For the Care and Treatment of

Nervous and Mental Diseases

New, Absolutely Fireproof Building.

BYRON M. CAPLES, M. D., Superintendent, Waukesha, Wis.

MAPLEWOOD
DR NORBURY'S
SANATORIUM

FOR THE TREATMENT OF
NERVOUS AND MENTAL DISEASE
JACKSONVILLE, ILLINOIS

CONSULTING STAFF:
FRANK R. FRY, M. D., St. Louis Mo.
CHARLES G. CHADDOCK, M. D., St. Louis.
HUGH T. PATRICK, M. D., Chicago.
HAROLD N. MOYER, M. D., Chicago

. . . Will receive, for private treatment, cases of nervous and mild mental disease. Modern facilities and conveniences; desirable location. Number of patients limited. For particulars apply to

FRANK PARSONS NORBURY, M. D., 420 WEST STATE STREET

STOVAINE

—Trade Mark Registered—

CHLORHYDRATE OF AMYLENE

A NEW LOCAL ANÆSTHETIC

EQUAL IN ANALGESIA TO, AND A PERFECT SUCCEDANEUM FOR COCAINE

SAFEST — BEST

AT ALL DRUGGISTS, OR

Literature on Request

WALTER F. SYKES & CO.

SOLE AGENTS

85 Water St., New York, N. Y.

Western Agents R. R. STREET & CO., Chicago, Ill.

THE WINTER SEASON

will be accompanied by

FROST BITES, COLD-SORES, CHAPPED HANDS, ETC.

PHÉNOL SODIQUE

is indicated in these conditions and in Cuts, Burns, Sores, etc. Relieves pain, stops bleeding, inhibits the growth of bacteria, and destroysgerm life.

PHÉNOL. SODIQUE is antiseptic, disinfectant, hemostatic, antacid, and prophylactic.

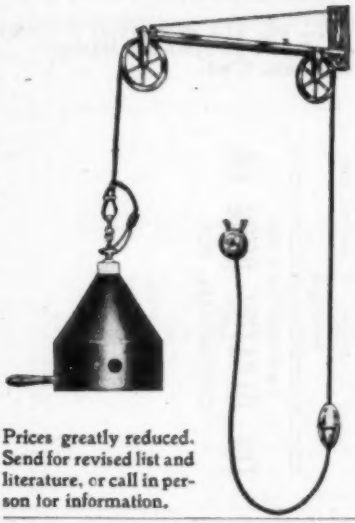
Sample and literature sent upon request. Mention this Journal.

HANCE BROTHERS & WHITE

PHARMACEUTICAL CHEMISTS

PHILADELPHIA NEW YORK CHICAGO PITTSBURGH

THE "LEUCODESCENT" THERAPEUTIC LAMP



Prices greatly reduced. Send for revised list and literature, or call in person for information.

depends. for its therapeutic value, upon

1—The law of electric light energy, that "The efficiency of the ***Blue-Violet*** (chemical) and ***Luminous*** (nutritional) frequencies is increased by increasing the current (amperage) through a single filament (carbon); and,

2—The reflecting and condensing surfaces surrounding the "leucodescent" globe itself, which are so mathematically proportioned as to preserve the valuable ***Blue-Violet*** and ***Luminous,*** without unduly increasing the interfering ***Heat*** rays.

The Radiant Heat output is amply sufficient, and the ***Blue-Violet*** and ***Luminous*** rays rapidly increase by geometric progression, until the 500 c. p. intensity is reached in the "leucodescent" type.

The ***"Leucodescent"*** is made in three intensities for Office and Hospital installation: 300, 400, and 500 c. p., each containing a single, specially prepared filament capable of carrying 7, 9, and 12 amperes; and is offered in a variety of styles and finishes.

A "Portable Leucodescent" is made of 200 c. p.; consumes 4½ amperes; can be carried to home of patient and attached to any electric light socket. It has considerable ***Blue-Violet*** and ***Luminous*** rays.

The "leucodescent" rays are bactericidal, anydyne, penetrating; promote elimination of waste and absorption of exudates; enhance the nutritive and hasten the reparative processes.

We continue to maintain, unremittingly, the supremacy of the ***"Leucodescent"*** type over ***all other incandescent*** therapeutic lamps, and commit ourselves, unequivocably to supply the doctor a ***better, more scientific*** apparatus than any other manufacturer in the market.

We Equal Any in Price and Excell All Others in Quality

Doctor, may we send you the "Leucodescent" ***Bulletin***—free?

SPEAR-MARSHALL CO.
1202 REPUBLIC BUILDING, CHICAGO

THE "MIDGET" **$14.99**

A portable radiant Heat Lamp with a parabolic reflector: consumes ***one*** ampere and is identical with others of this type on the market and sold at $40.00. ***But it is not of the "Leucodescent" type***

TUBERCULOSIS

The Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, Cal.

Located 16 miles from Los Angeles, in the **FOOT HILLS** of the **SIERRA MADRE MOUNTAINS** in **SOUTHERN CALIFORNIA,** at an elevation of 1000 feet above the sea. While this institution offers the best **ALL-YEAR-ROUND** climate in the world, it does not depend on it alone for cure. Thoroughly equipped for **SCIENTIFIC TREATMENT.** Good food and careful guidance for all. Tuberculin, Violet rays, hydrotherapy in selected cases. Careful individualization, and attention to details. All patients under the immediate supervision of the Medical Director. Address,

F. M. POTTENGER, Ph. M., M. D., Medical Director,
Monrovia or 602-3 O. T. Johnson Bldg.
Los Angeles, Cal.

THERMOSA

ASEPTIC—DETERGENT—ANTISEPTIC

Is used extensively and successfully for

BOILS FELONS
SPRAINS CHRONIC ULCERS
INFLAMED GLANDS ERYSIPELAS
PLEURISY BRONCHITIS
PNEUMONIA PERIOSTITIS

And all cases where pain, inflammation or congestion is present and a local medication is indicated.

LABORATORY OF
THE DECATUR DRUG CO.
DECATUR, ILL.

DR. PETTEY'S RETREATS

FOR THE TREATMENT OF

ALCOHOL AND DRUG ADDICTIONS

958 DAVIE AVENUE, MEMPHIS, TENN. 1939 EAST EVANS AVE., DENVER, COLO.
1849 DWINELL STREET, OAKLAND, CALIF.

Methods employed render these addictions the most certainly and readily curable of all the chronic ailments. For particulars addres the Retreat most convenient to you.

BOOKS!
BOOKS!
BOOKS!

E. H. COLEGROVE & COMPANY,
Medical Booksellers

Send for New 1905-6 Catalogue. 65 Randolph St., CHICAGO, ILLS.

Blood Food

To feed the body and starve the blood is like pouring water through a sieve. If the blood is thin and weak, the digestive power of the body is weak. Why feed it food that it cannot take care of?

Feed the blood with

Pepto-Mangan ("Gude")

and the whole body is strengthened and reorganized, and the digestive tract will promptly perform its normal function. The already weakened stomach is not compelled to do extra work; PEPTO-MANGAN ("GUDE") is immediately taken up by the blood and does not produce any gastric disturbance.

To assure proper filling of prescriptions, order Pepto-Mangan ("Gude") in original bottles containing ℥ xi. IT'S NEVER SOLD IN BULK.

PEPTO-MANGAN ("GUDE") is ready for quick absorption and rapid infusion into the circulating fluid and is consequently of marked and certain value in all forms of

Anæmia, Chlorosis,
Bright's Disease,
Rachitis, Neurasthenia, etc.

Samples and literature upon application.

M. J. BREITENBACH COMPANY,

LABORATORY,
LEIPZIG, GERMANY.

53 Warren Street, NEW YORK

The sick man's ability to appropriate the foods given him must be reckoned with, especially in all cases where the blood is thin and the vitality low

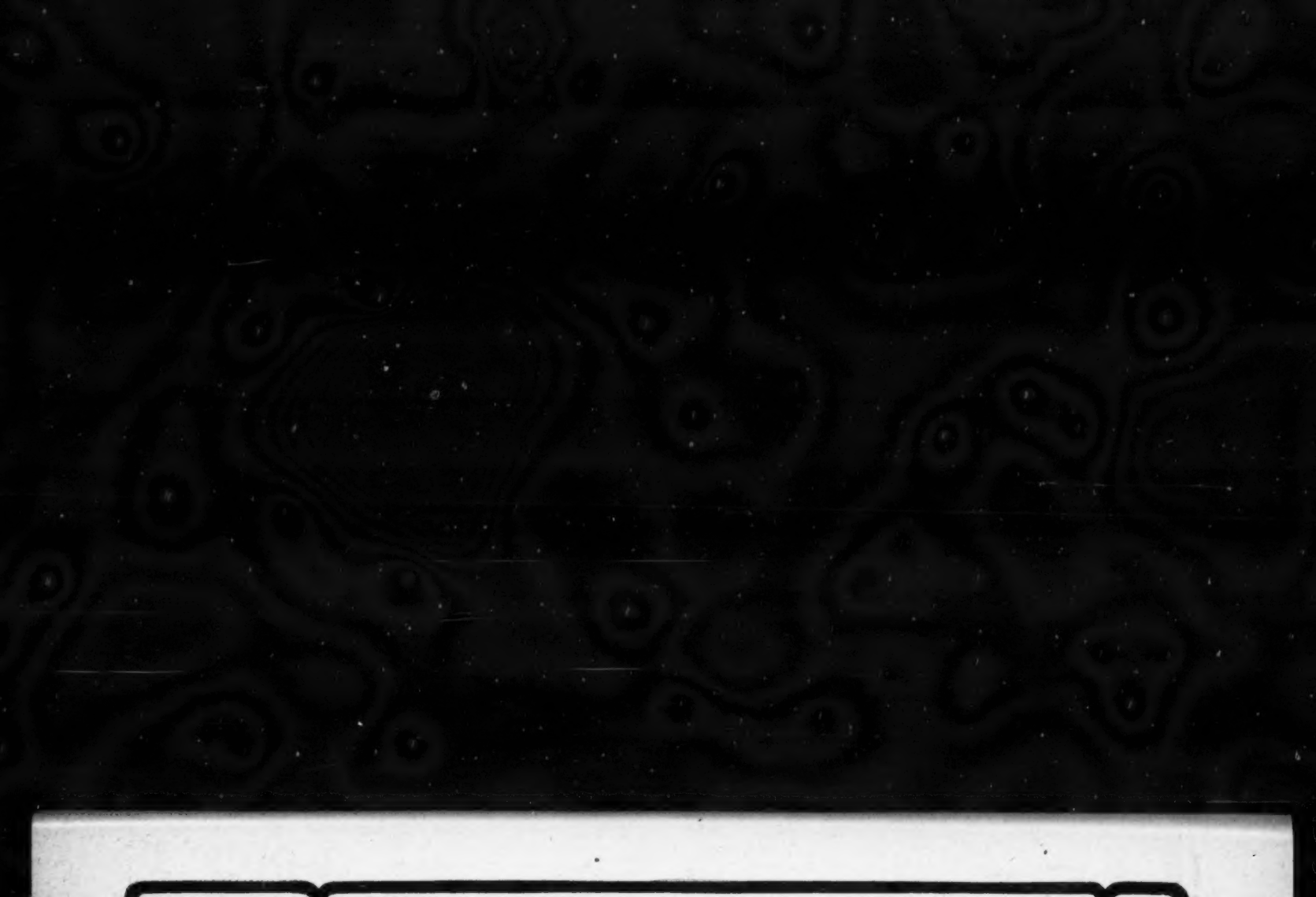
Extract of Red Bone Marrow

Medullary Glyceride

is easily assimilated, and has in it the elements that are needed by those afflicted with anemia, chlorosis, marasmus, rachitis, malaria and other diseases that the physicians meet with daily.

Sig.—1 to 2 dr. well diluted with cold water t.i.d.

Armour & Company, Chicago



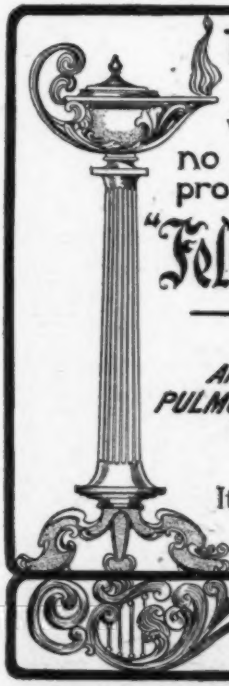
IN ANY CONDITION

of impaired health characterized
by a tendency to general
exhaustion, the patient who takes

GRAY'S Glycerine TONIC Comp.

regularly will eat more,
sleep better, be less nervous,
have more strength, be less dragged out

THE PURDUE FREDERICK CO.,
298 Broadway, New York



THE PHYSICIAN OF MANY YEARS EXPERIENCE
knows that through all the
waves of change and progress
no remedy is so widely used by the
profession or held in such high favor as

"Fellows' Syrup of Hypophosphites"

IN THE TREATMENT OF
ANAEMIA, NEURASTHENIA, BRONCHITIS, INFLUENZA
PULMONARY TUBERCULOSIS AND WASTING DISEASES OF
CHILDHOOD, AND DURING CONVALESCENCE
FROM EXHAUSTING DISEASES.

It stands without a peer, advertised
only to the medical profession,
is on sale in every Drug Store
in the United States.

MR. FELLOWS
26 CHRISTOPHER STREET NEW YORK.

PARKE, DAVIS & CO'S ANTIDIPHTHERIC SERUM

BACTERIOLOGICALLY AND PHYSIOLOGICALLY TESTED.

AN ANTITOXIN THAT MAY BE RELIED UPON IN EMERGENCY.

Our **Antidiphtheric Serum** is prepared with extraordinary care, every method and appliance utilized in its production being in strict conformity with the most scientific procedure.

It is rigidly tested, bacteriologically and physiologically.

It is supplied in a container which effectually prevents contamination.

The physician who uses it does so with full assurance of its purity, potency and invariability.

Bulbs of 500, 1000, 2000, 3000 and 4000 units, hermetically sealed, with syringe attachments.

We protect both doctor and druggist

against loss by accepting unused Antidiphtheric Serum in exchange. Each package of antitoxin bears a return date (one year after date of manufacture).

PARKE, DAVIS & COMPANY

LABORATORIES: DETROIT, MICH., U.S.A.; WALKERVILLE, ONT.; HOUNSLOW, ENG.

BRANCHES: NEW YORK, CHICAGO, ST. LOUIS, BOSTON, BALTIMORE, NEW ORLEANS, KANSAS CITY, INDIANAPOLIS, MINNEAPOLIS, MEMPHIS; LONDON, ENG.; MONTREAL, QUE.; SYDNEY, N S.W.; ST. PETERSBURG, RUSSIA; SIMLA, INDIA; TOKIO, JAPAN.